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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:44:48 ; Search time 0.585209 Seconds
(without alignments)
292.168 Million cell updates/sec

Title: US-09-606-129A-18

Perfect score: 41

Sequence: 1 KKRIMHC 7

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued_Patents_AA.*

1: /cgn2_6/ptodata/1/iaa/5A.COMB.pep.*

2: /cgn2_6/ptodata/1/iaa/5B.COMB.pep.*

3: /cgn2_6/ptodata/1/iaa/6A.COMB.pep.*

4: /cgn2_6/ptodata/1/iaa/6B.COMB.pep.*

5: /cgn2_6/ptodata/1/iaa/PCTUS.COMB.pep.*

6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	32	78.0	40	1	US-07-822-966B-4
2	32	78.0	88	1	Sequence 4, Appli
3	32	78.0	99	5	Sequence 19, Appl
4	32	78.0	141	1	Sequence 5, Appli
5	32	78.0	141	2	Sequence 6, Appli
6	32	78.0	142	1	Sequence 6, Appli
7	32	78.0	142	5	Sequence 18, Appl
8	32	78.0	269	4	Sequence 7, Appli
9	32	78.0	294	2	Sequence 5, Appli
10	32	78.0	294	3	Sequence 10, Appl
11	32	78.0	294	4	Sequence 10, Appl
12	32	78.0	294	4	Sequence 10, Appl
13	32	78.0	294	4	Sequence 10, Appl
14	32	78.0	527	4	Sequence 3, Appli
15	32	78.0	528	2	Sequence 2, Appli
16	32	78.0	528	4	Sequence 2, Appli
17	32	78.0	565	2	Sequence 6, Appli
18	32	78.0	571	2	Sequence 5, Appli
19	31	75.6	504	3	Sequence 6, Appli
20	31	75.6	504	4	Sequence 6, Appli
21	31	75.6	550	3	Sequence 9, Appli
22	30	73.2	508	4	Sequence 3, Appli
23	30	73.2	508	4	Sequence 3, Appli
24	29	70.7	257	3	Sequence 6, Appli
25	29	70.7	257	3	Sequence 6, Appli
26	29	70.7	396	3	Sequence 2, Appli
27	29	70.7	568	2	Sequence 4, Appli

28	29	70.7	568	4	US-09-359-357-4	Sequence 4, Appli
29	29	70.7	588	2	US-08-835-170-2	Sequence 2, Appli
30	29	70.7	588	4	US-09-359-257-2	Sequence 2, Appli
31	28	68.3	22	1	US-08-484-635-166	Sequence 166, App
32	28	68.3	22	2	US-08-484-631-166	Sequence 166, App
33	28	68.3	22	2	US-08-827-570-166	Sequence 166, App
34	28	68.3	55	1	US-08-469-427A-3	Sequence 3, Appli
35	28	68.3	55	2	US-08-609-443B-3	Sequence 3, Appli
36	28	68.3	55	2	US-08-569-063C-3	Sequence 3, Appli
37	28	68.3	188	1	US-08-469-427A-5	Sequence 5, Appli
38	28	68.3	188	2	US-08-609-443B-5	Sequence 5, Appli
39	28	68.3	188	2	US-08-569-063C-5	Sequence 5, Appli
40	28	68.3	195	1	US-08-469-427A-7	Sequence 7, Appli
41	28	68.3	195	2	US-08-609-443B-7	Sequence 7, Appli
42	28	68.3	195	2	US-08-569-063C-7	Sequence 7, Appli
43	28	68.3	477	2	US-08-560-098A-51	Sequence 51, Appli
44	28	68.3	873	3	US-08-990-140-2	Sequence 2, Appli
45	28	68.3	873	4	US-09-546-238-2	Sequence 2, Appli

ALIGNMENTS

RESULT 1

US-07-822-966B-4.

; Sequence 4, Application US/07822966B

; Patent No. 5498597

; GENERAL INFORMATION:

; APPLICANT: Steven J. Burakoff

; APPLICANT: Stuart L. Schreiber

; APPLICANT: Barbara E. Bierer

; TITLE OF INVENTION: FKBP-13, AN FK506-BINDING

; TITLE OF INVENTION: IMMUNOPHILIN

; NUMBER OF SEQUENCES: 6

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Fish & Richardson P.C.

; STREET: 225 Franklin Street

; CITY: Boston

; STATE: Massachusetts

; COUNTRY: U.S.A.

; ZIP: 02110-2804

; COMPUTER READABLE FORM:

; MEDIUM TYPE: 3.5" Diskette, 1.44 Mb

; COMPUTER: IBM PS/2 Model 50Z or 55SX

; OPERATING SYSTEM: IBM P.C. DOS (Version 3.30)

; SOFTWARE: WordPerfect (Version 5.0)

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/07/822,966B

; FILING DATE: January 17, 1992

; ATTORNEY/AGENT INFORMATION:

; NAME: Fraser, Janis K.

; REGISTRATION NUMBER: 34,819

; REFERENCE/DOCKET NUMBER: 00530/052001

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: (617) 542-5070

; TELEFAX: (617) 542-8906

; TELEX: 200154

; INFORMATION FOR SEQ ID NO: 4:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 40

; TYPE: amino acid

; STRANDEDNESS:

; TOPOLOGY: linear

; US-07-822-966B-4

Query Match 78.0%; Score 32; DB 1; Length 40;

Best Local Similarity 71.4%; Pred No. 3.8;

Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7

Db 14 KKRVDHC 20

RESULT 2
US-08-336-618-19
; Sequence 19, Application US/08336618
; Patent No. 5763590
; GENERAL INFORMATION:
; APPLICANT: Peattie, Debra A.
; APPLICANT: Harding, Matthew W.
; APPLICANT: Livingston, David J.
; TITLE OF INVENTION: ISOLATION OF AN MR 52,000 FK506 BINDING
; TITLE OF INVENTION: PROTEIN AND MOLECULAR CLONING OF A CORRESPONDING HUMAN
; TITLE OF INVENTION: CDNA
; NUMBER OF SEQUENCES: 32
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Hamilton, Brook, Smith and Reynolds, P.C.
; STREET: Two Militia Drive
; CITY: Lexington
; STATE: Massachusetts
; COUNTRY: U.S.A.
; ZIP: 02173
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/336,618
; FILING DATE: 09-NOV-1994
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/963,325
; FILING DATE: 16-OCT-1992
; APPLICATION NUMBER: US 07/777,752
; FILING DATE: 11-OCT-1991
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/
; FILING DATE: 09-OCT-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Granahan, Patricia
; REGISTRATION NUMBER: 32,227
; REFERENCE/DOCKET NUMBER: VPI91-06A
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-861-6240
; TELEFAX: 617-861-9540
; INFORMATION FOR SEQ ID NO: 19:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 88 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-336-618-19

Query Match 78.0%; Score 32; DB 1; Length 88;
Best Local Similarity 71.4%; Pred. No. 8.1;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
Db 14 KKRVDHC 20
|||: ||

RESULT 3
PCT-US92-03993-5
; Sequence 5, Application PC/TUS9203993
; GENERAL INFORMATION:
; APPLICANT: Harding, Matthew W.
; TITLE OF INVENTION: FKBP: A NOVEL PROLYL ISOMERASE AND
; TITLE OF INVENTION: RAPAMYCIN/FK506 BINDING PROTEIN
; NUMBER OF SEQUENCES: 10
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Hamilton, Brook, Smith & Reynolds, P.C.
; STREET: Two Militia Drive
; CITY: Lexington
; STATE: Massachusetts
; COUNTRY: U.S.A.
; ZIP: 02110-2804
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
; COMPUTER: IBM PS/2 Model 502 or 55SX
; OPERATING SYSTEM: IBM P.C. DOS (Version 3.30)
; SOFTWARE: Wordperfect (Version 5.0)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/822,966B
; FILING DATE: January 17, 1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Fraser, Janis K.
; REGISTRATION NUMBER: 34,819
; REFERENCE/DOCKET NUMBER: 00530/052001
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (617) 542-5070
; TELEFAX: (617) 542-8906
; TELEX: 200154

STATE: MA
COUNTRY: USA
ZIP: 02173
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/03993
FILING DATE: 19920507
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/697,113
FILING DATE: 08-MAY-1991
ATTORNEY/AGENT INFORMATION:
NAME: Granahan, Patricia
REGISTRATION NUMBER: 32,227
REFERENCE/DOCKET NUMBER: VPI91-05A PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 861-6240
TELEFAX: (617) 861-9540
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 99 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US92-03993-5

Query Match 78.0%; Score 32; DB 5; Length 99;
Best Local Similarity 71.4%; Pred. No. 9.1;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
Db 14 KKRVDHC 20
|||: ||

RESULT 4
US-07-822-966B-6
; Sequence 6, Application US/07822966B
; Patent No. 5498597
; GENERAL INFORMATION:
; APPLICANT: Steven J. Burakoff
; APPLICANT: Stuart L. Schreiber
; APPLICANT: Barbara E. Bierer
; TITLE OF INVENTION: FKBP-13, AN FK506-BINDING
; TITLE OF INVENTION: IMMUNOPHILIN
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson P.C.
; STREET: 225 Franklin Street
; CITY: Boston
; STATE: Massachusetts
; COUNTRY: U.S.A.
; ZIP: 02110-2804
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
; COMPUTER: IBM PS/2 Model 502 or 55SX
; OPERATING SYSTEM: IBM P.C. DOS (Version 3.30)
; SOFTWARE: Wordperfect (Version 5.0)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/822,966B
; FILING DATE: January 17, 1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Fraser, Janis K.
; REGISTRATION NUMBER: 34,819
; REFERENCE/DOCKET NUMBER: 00530/052001
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (617) 542-5070
; TELEFAX: (617) 542-8906
; TELEX: 200154

INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 141 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
us-07-822-966B-6

Query Match 78.0%; Score 32; DB 1; Length 141;
Best Local Similarity 71.4%; Pred. No. 13;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|||: ||
Db 35 KKRVDHC 41

RESULT 5
US-08-803-899-6
Sequence 6, Application US/08803899
Patent No. 5912224
GENERAL INFORMATION:
APPLICANT: DONAHOE, PATRICIA K.
APPLICANT: WANG, TONGWEN
TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR ENHANCING
CELLULAR RESPONSE TO TGF-BETA LIGANDS
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 NEW YORK AVENUE, SUITE 600
CITY: WASHINGTON
STATE: DC
COUNTRY: USA
ZIP: 20005

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/803.899
FILING DATE: 02/21/1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/012,054
FILING DATE: 02/22/1996
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36,688
REFERENCE/DOCKET NUMBER: 0609.4240001

TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)371-2600
TELEFAX: (202)371-2540
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 141 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-803-899-6

Query Match 78.0%; Score 32; DB 2; Length 141;
Best Local Similarity 71.4%; Pred. No. 13;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|||: ||
Db 35 KKRVDHC 41

RESULT 6
US-08-336-618-18
Sequence 18, Application US/08336618
Patent No. 5763590
GENERAL INFORMATION:
APPLICANT: Peattie, Debra A.
APPLICANT: Harding, Matthew W.
APPLICANT: Livingston, David J.
TITLE OF INVENTION: ISOLATION OF AN MR 52,000 FK506 BINDING
PROTEIN AND MOLECULAR CLONING OF A CORRESPONDING HUMAN
CDNA
TITLE OF INVENTION: CDNA
NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hamilton, Brook, Smith and Reynolds, P.C.
STREET: Two Militia Drive
CITY: Lexington
STATE: Massachusetts
COUNTRY: U.S.A.
ZIP: 02173

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/336.618
FILING DATE: 09-NOV-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/963,325
FILING DATE: 16-OCT-1992
APPLICATION NUMBER: US 07/777,752
FILING DATE: 11-OCT-1991

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/336.618
FILING DATE: 09-NOV-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/963,325
FILING DATE: 16-OCT-1992
APPLICATION NUMBER: US 07/777,752
FILING DATE: 11-OCT-1991

Query Match 78.0%; Score 32; DB 1; Length 142;
Best Local Similarity 71.4%; Pred. No. 13;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|||: ||
Db 36 KKRVDHC 42

RESULT 7
PCT-US92-03993-7
Sequence 7, Application PC/TUS9203993
GENERAL INFORMATION:
APPLICANT: Harding, Matthew W.
TITLE OF INVENTION: RFKBP: A NOVEL PROLYL ISOMERASE AND
RAPAMYCIN/FK506 BINDING PROTEIN
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hamilton, Brook, Smith & Reynolds, P.C.
STREET: Two Militia Drive
CITY: Lexington
STATE: MA

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;
; COUNTRY: USA
; ZIP: 02173
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: PCT/US92/03993
; FILING DATE: 19920507
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/697,113
; FILING DATE: 08-MAY-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Granahan, Patricia
; REGISTRATION NUMBER: 32,227
; REFERENCE/DOCKET NUMBER: VP191-05A PCT
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (617) 861-6240
; TELEFAX: (617) 861-9540
; INFORMATION FOR SEQ ID NO: 7:
; LENGTH: 142 amino acids
; TYPE: AMINO ACID
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; PCT-US92-03993-7

Query Match 78.0%; Score 32; DB 5; Length 142;
Best Local Similarity 71.4%; Pred. No. 13;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
Db 36 KKRVDHC 42

RESULT 8
US-09-006-783A-5
; Sequence 5, Application US/09006783A
; Patent No. 6297366
; GENERAL INFORMATION:
; APPLICANT: Gudkov, Andrey V
; APPLICANT: Garkavstev, Igor
; APPLICANT: Riabowol, Karl
; TITLE OF INVENTION: p37ING1 as a Mediator of p53 Signaling
; TITLE OF INVENTION: Pathway
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: McDonnell Boehnen Hulbert & Berghoff
; STREET: 300 South Wacker Drive
; CITY: Chicago
; STATE: Illinois
; COUNTRY: USA
; ZIP: 60606
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/006,783A
; FILING DATE: 15-JAN-1998
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: No. 6297366nan, Kevin E
; REGISTRATION NUMBER: 35,303
; REFERENCE/DOCKET NUMBER: 97,837
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 312-913-0001
; TELEFAX: 312-913-0002
; INFORMATION FOR SEQ ID NO: 5:
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; SEQUENCE CHARACTERISTICS:
; LENGTH: 269 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-09-006-783A-5

Query Match 78.0%; Score 32; DB 4; Length 269;
Best Local Similarity 57.1%; Pred. No. 24;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
Db 67 KRRMLHC 73

RESULT 9
US-09-258-371-10
; Sequence 10, Application US/09258371
; Patent No. 5986078
; GENERAL INFORMATION:
; APPLICANT: Garkavtsev, Igor
; APPLICANT: Riabowol, Karl
; TITLE OF INVENTION: DNA SEQUENCE ENCODING THE TUMOR
; TITLE OF INVENTION: SUPPRESSOR GENE INGI
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Burns, Doane, Swecker & Mathis
; STREET: 699 Prince Street
; CITY: Alexandria
; STATE: VA
; COUNTRY: USA
; ZIP: 22313-1404
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/258,371
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/751,230
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Mool, Leslie A.
; REGISTRATION NUMBER: 37,047
; REFERENCE/DOCKET NUMBER: 028722-144
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-854-7400
; TELEFAX: 415-854-8275
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 294 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-09-258-371-10

Query Match 78.0%; Score 32; DB 2; Length 294;
Best Local Similarity 57.1%; Pred. No. 26;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
Db 82 KRRMLHC 88

RESULT 10
US-08-751-230-10
; Sequence 10, Application US/08751230
; Patent No. 6117633
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GENERAL INFORMATION:
APPLICANT: Garkavtsev, Igor
APPLICANT: Riabowol, Karl
TITLE OF INVENTION: DNA SEQUENCE ENCODING THE TUMOR
TITLE OF INVENTION: SUPPRESSOR GENE INGI
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Burns, Doane, Swecker & Mathis
STREET: 699 Prince Street
CITY: Alexandria
STATE: VA
COUNTRY: USA
ZIP: 22313-1404
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/751,230
FILING DATE: 15-NOV-1996
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/569721
FILING DATE: 08-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Mooi, Leslie A.
REGISTRATION NUMBER: 37,047
REFERENCE/DOCKET NUMBER: 028722-144
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-854-7400
TELEFAX: 415-854-8275
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 294 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-751-230-10

Query Match 78.0%; Score 32; DB 3; Length 294;
Best Local Similarity 57.1%; Pred. No. 26;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|:|:|:|
Db 82 KRRMLHC 88

RESULT 11
US-09-499-082-10
; Sequence 10, Application US/09499082
; Patent No. 6143522
; GENERAL INFORMATION:
; APPLICANT: Helbing, Caren C.
; APPLICANT: Riabowol, Karl
; APPLICANT: Johnston, Randall N.
; APPLICANT: Garkavtsev, Igor
; TITLE OF INVENTION: METHODS OF MODULATING APOPTOSIS
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Burns, Doane, Swecker & Mathis
; STREET: 699 Prince Street
; CITY: Alexandria
; STATE: VA
; COUNTRY: USA
; ZIP: 22313-1404
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/499,082
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/828,158
FILING DATE: 27-MAR-1997
APPLICATION NUMBER: US 08/751230
FILING DATE: 15-NOV-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/569721
FILING DATE: 08-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Mooi, Leslie A.
REGISTRATION NUMBER: 37,047
REFERENCE/DOCKET NUMBER: 028722-148
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-854-7400
TELEFAX: 650-854-8275
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 294 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-499-082-10

Query Match 78.0%; Score 32; DB 4; Length 294;
Best Local Similarity 57.1%; Pred. No. 26;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|:|:|:|
Db 82 KRRMLHC 88

RESULT 12
US-09-258-372-10
; Sequence 10, Application US/09258372
; Patent No. 6238918
; GENERAL INFORMATION:
; APPLICANT: Garkavtsev, Igor
; APPLICANT: Riabowol, Karl
; TITLE OF INVENTION: DNA SEQUENCE ENCODING THE TUMOR
; TITLE OF INVENTION: SUPPRESSOR GENE INGI
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Burns, Doane, Swecker & Mathis
; STREET: 699 Prince Street
; CITY: Alexandria
; STATE: VA
; COUNTRY: USA
; ZIP: 22313-1404
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/258,372
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/751,230
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Mooi, Leslie A.
; REGISTRATION NUMBER: 37,047
; REFERENCE/DOCKET NUMBER: 028722-144
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-854-7400
; TELEFAX: 415-854-8275
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:

; LENGTH: 294 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-258-372-10

Query Match 78.0%; Score 32; DB 4; Length 294;
Best Local Similarity 57.1%; Pred. No. 26;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
|:|:|:|
Db 82 KRRMLHC 88

RESULT 13
US-09-006-783A-3
; Sequence 3, Application US/09006783A
; Patent No. 6297366
; GENERAL INFORMATION:
; APPLICANT: Gudkov, Andrey V
; APPLICANT: Garkavstev, Igor
; APPLICANT: Riabowol, Karl
; TITLE OF INVENTION: p33/Ingl as a Mediator of p53 Signaling
; TITLE OF INVENTION: Pathway
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: McDonnell Boehnen Hulbert & Berghoff
; STREET: 300 South Wacker Drive
; CITY: Chicago
; STATE: Illinois
; COUNTRY: USA
; ZIP: 60606
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/006,783A
; FILING DATE: 15-JAN-1998
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: No. 6297366nan, Kevin E
; REGISTRATION NUMBER: 35,303
; REFERENCE/DOCKET NUMBER: 97,837
; TELEPHONE: 312-913-0001
; TELEFAX: 312-913-0002
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 294 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-006-783A-3

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Best Local Similarity 57.1%; Pred. No. 26;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
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Db 82 KRRMLHC 88

RESULT 14
US-09-659-166-2
; Sequence 2, Application US/09659166
; Patent No. 635465
; GENERAL INFORMATION:
; APPLICANT: CREASY, CARETHA LEE
; APPLICANT: TESTA, TANIA TAMSON

; TITLE OF INVENTION: NOVEL COMPOUNDS
; FILE REFERENCE: GP-30218
; CURRENT APPLICATION NUMBER: US/09/659,166
; CURRENT FILING DATE: 2000-09-11
; PRIOR APPLICATION NUMBER: UK 9921505.5
; PRIOR FILING DATE: 1999-09-10
; NUMBER OF SEQ ID NOS: 2
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 2
; LENGTH: 527
; TYPE: PRT
; ORGANISM: rattus
US-09-659-166-2

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QY 1 KKRIMHC 7
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Db 267 KRIIHC 273

RESULT 15
US-08-802-466-2
; Sequence 2, Application US/08802466
; Patent No. 5972606
; GENERAL INFORMATION:
; APPLICANT: Creasy, et al.
; TITLE OF INVENTION: HUMAN PROTEIN KINASE HOACF72
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: SmithKline Beecham Corporation
; STREET: 709 Swedeland Road
; CITY: King of Prussia
; STATE: PA
; COUNTRY: USA
; ZIP: 19406
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSeq for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/802,466
; FILING DATE: 19 February 1997
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: William T. Han
; REGISTRATION NUMBER: 34,344
; REFERENCE/DOCKET NUMBER: GH50002
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 610-270-5219
; TELEFAX: 610-270-4026
; TELEX:
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 528 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-802-466-2

Query Match 78.0%; Score 32; DB 2; Length 528;
Best Local Similarity 71.4%; Pred. No. 46;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
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Wed Nov 6 14:27:41 2002

us-09-606-129a-18.ra1

Page 7

Db 268 KNRIHC 274

Search completed: November 1, 2002, 14:51:57
Job time : 2.58521 secs

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:40:53 ; Search time 1.58682 Seconds
(without alignments)
489.985 Million cell updates/sec

Title: US-09-606-129A-18

Perfect score: 41

Sequence: 1 KKRIMHC 7

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Total number of hits satisfying chosen parameters: 747574

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Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	36	87.8	285	21	Arabidopsis thalia
2	34	82.9	94	21	Murine INGB1 isofo
3	34	82.9	279	21	Murine P37ING1 pol
4	33	80.5	508	21	Arabidopsis thalia
5	33	80.5	533	21	Arabidopsis thalia
6	33	80.5	564	21	Arabidopsis thalia
7	32	78.0	40	17	Bovine FRBP-13 imm
8	32	78.0	83	22	Novel human diagno
9	32	78.0	83	22	Human colon cancer
10	32	78.0	94	21	Human INGB1 isofo
11	32	78.0	99	13	Bovine RFBKBP. Bos

12	32	78.0	104	21	AAG03758	Human secreted pro
13	32	78.0	128	20	AAV03245	Amino acid sequenc
14	32	78.0	137	22	AAV03245	Bovine mammary tis
15	32	78.0	141	17	AAR33551	Human FRBP-13 immu
16	32	78.0	141	21	AAU33247	Human colon cancer
17	32	78.0	182	22	AAU31050	Novel human secret
18	32	78.0	235	21	AAU31050	Amino acid sequenc
19	32	78.0	279	21	AAV97244	Human P37ING1. Ho
20	32	78.0	279	22	AAE06676	Tumour suppressor
21	32	78.0	279	22	AAE06676	Amino acid sequenc
22	32	78.0	294	18	AAW19119	Tumour suppressor
23	32	78.0	294	19	AAW79675	Human P37ING1 poly
24	32	78.0	294	20	AAV03244	Amino acid sequenc
25	32	78.0	294	22	AAV03244	Amino acid sequenc
26	32	78.0	328	22	AAV03244	E. coli growth and
27	32	78.0	455	22	AAV03244	Drosophila melanog
28	32	78.0	528	19	AAE02011	Human protein kina
29	32	78.0	528	22	AAE02011	Human YAK1 (hYAK1)
30	32	78.0	549	21	AAV68781	Amino acid sequenc
31	32	78.0	565	20	AAW96316	Acidic leucine ami
32	32	78.0	571	20	AAW96315	Acidic leucine ami
33	32	78.0	705	22	ABG24213	Novel human diagno
34	32	78.0	795	22	AAU29777	Novel human secret
35	31	75.6	63	22	ABG09069	Novel human diagno
36	31	75.6	82	22	AAV87522	Human immune/haema
37	31	75.6	103	22	ABG08440	Novel human diagno
38	31	75.6	109	22	ABV57919	Drosophila melanog
39	31	75.6	350	22	ABV50167	Human transcriptio
40	31	75.6	398	22	ABV62446	Drosophila melanog
41	31	75.6	504	18	AAW36140	Bovine P58 protein
42	31	75.6	504	22	ABG09790	Novel human diagno
43	31	75.6	550	19	AAW71468	Carcospora nicotia
44	31	75.6	550	21	AAV99884	Carcospora nicotia
45	31	75.6	709	22	AAV93837	Human polypeptide,

ALIGNMENTS

RESULT 1

AAG28710

ID AAG28710 standard; Protein; 285 AA.

XX AAG28710;

XX 17-OCT-2000 (first entry)

DE Arabidopsis thaliana protein fragment SEQ ID NO: 34031.

KW protein identification; signal transduction pathway; metabolic pathway;
KW hybridisation assay; genetic mapping; gene expression control; promoter;
KW termination sequence.

OS Arabidopsis thaliana.

PN EP1033405-A2.

PD 06-SEP-2000.

PF 25-FEB-2000; 2000EP-0301439.

PR 25-FEB-1999; 99US-0121825.

PR 05-MAR-1999; 99US-0123180.

PR 09-MAR-1999; 99US-0123548.

PR 23-MAR-1999; 99US-0125788.

PR 25-MAR-1999; 99US-0126264.

PR 29-MAR-1999; 99US-0126785.

PR 01-APR-1999; 99US-0127462.

PR 06-APR-1999; 99US-0128234.

PR 08-APR-1999; 99US-0128714.

PR 16-APR-1999; 99US-0129845.

PR 19-APR-1999; 99US-0130077.

PR 21-APR-1999; 99US-0130449.

PR 23-APR-1999; 99US-0130510.
PR 23-APR-1999; 99US-0130891.
PR 28-APR-1999; 99US-0131449.
PR 30-APR-1999; 99US-0132048.
PR 30-APR-1999; 99US-0132407.
PR 04-MAY-1999; 99US-0132484.
PR 05-MAY-1999; 99US-0132485.
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PR 07-MAY-1999; 99US-0132487.
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Query Match 87.8%; Score 36; DB 21; Length 285;

Best Local Similarity 71.4%; Pred. No. 21;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

OY 1 KKRIMHC 7
 Db 13 KKRLLHC 19

RESULT 2
 AA97243
 ID AA97243 standard; Protein; 94 AA.

XX AC AA97243;
 XX DT 19-DEC-2000 (first entry)
 XX DE Murine INGB1 isoform N-terminal peptide.
 XX p53; tumour; cancer; detection; antibody; hybridisation; exon 1b;
 KW INGL; ing1; p33ING1; p37ING1; oncogene; gene therapy; diagnosis;
 KW proliferation disorder; transformation; transformed cell; mouse.
 XX OS Mus musculus.
 XX PN WO200046370-A1.
 XX PD 10-AUG-2000.
 XX PF 04-FEB-1999; 2000WO-US02959.
 XX PR 04-FEB-1999; 99US-0118941.
 XX PA (UNII) UNIV ILLINOIS FOUND.
 XX PI Gudkov A, Zeremski M, Gurova KV, Grigorian IA;
 XX WPI; 2000-491278/43.
 XX DR

PT Detecting nucleic acid encoding exon 1b of ing1, useful for diagnosing
 PT and treating cancer, comprises contacting sample with isolated nucleic
 PT acid comprising sequence of exon 1b and detecting hybridized products

XX Claim 6; Fig 7a; 134pp; English.

XX Mutations in or loss of the p53 gene occur in more than 50% of
 CC human tumours and tumour cell lines, but functional inactivation of
 CC the p53 pathway occurs in a much larger proportion of tumours. In
 CC many cases the mechanism of functional inactivation of the p53 gene
 CC remains unknown but p53 has been found to act in cooperation with

CC INGL. Functional cooperation between INGL and p53 suggested that
 CC INGL encoded a tumour suppressor protein that functioned within the
 CC p53 pathway. This data suggested a possible role for INGL in head
 CC and neck cancers and chromosomal location of the INGL placed it
 CC within a region that is frequently rearranged in head and neck
 CC cancers. Large scale analysis of tumours involving INGL has not
 CC revealed mutations in INGL nor significant variations in its
 CC expression suggesting that INGL was not a useful gene to study in
 CC cancer etiology. However, alternative initiation exons of the ing1
 CC gene, each having their own promoter have been discovered.
 CC Expression of one promoter (1a) produces a protein identical to
 CC INGL. Expression of a second promoter (1b) produces a protein having
 CC an identical C-terminal fragment to INGL but an additional 104
 CC N-terminal amino acids. The newly discovered protein has been
 CC designated p37ING1 (Wild type: p33ING1). p37ING1 has the
 CC characteristics of an oncogene. When overexpressed in cells (even
 CC those expressing wild type p53) p37ING1 is able to cause
 CC proliferation or transformation of those cells. Thus detecting a
 CC nucleic acid encoding exon 1b of ing1 by hybridisation with an
 CC isolated nucleic acid having the sequence of exon 1b of ing1
 CC or its antisense sequence can identify individuals expressing the
 CC oncogenic form of ing1. Novel peptide sequences taken from the 104
 CC N-terminal peptide of p37ING1 can also be used to raise antibodies
 CC that can also be used in detection methods for the p37ING1 variant.
 CC The polypeptides may be useful in gene therapy for treatment of cell
 CC proliferation disorders, especially cancers and for diagnosing and
 CC studying cancers.

XX Sequence 94 AA;

Query Match 82.9%; Score 34; DB 21; Length 94;

Best Local Similarity 57.1%; Pred. No. 18;

Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

OY 1 KKRIMHC 7
 Db 67 KRRVLHC 73

RESULT 3
 AA97242
 ID AA97242 standard; Protein; 279 AA.

XX AC AA97242;
 XX DT 19-DEC-2000 (first entry)
 XX DE Murine P37ING1 polypeptide.
 XX p53; tumour; cancer; detection; antibody; hybridisation; exon 1b;
 KW INGL; ing1; p33ING1; p37ING1; oncogene; gene therapy; diagnosis;
 KW proliferation disorder; transformation; transformed cell; mouse.
 XX OS Mus musculus.
 XX PN WO200046370-A1.
 XX PD 10-AUG-2000.
 XX PF 04-FEB-2000; 2000WO-US02959.
 XX PR 04-FEB-1999; 99US-0118941.
 XX PA (UNII) UNIV ILLINOIS FOUND.
 XX PI Gudkov A, Zeremski M, Gurova KV, Grigorian IA;
 XX WPI; 2000-491278/43.
 XX DR N-PSDB; AA53790.

PT Detecting nucleic acid encoding exon 1b of ing1, useful for diagnosing
 PT and treating cancer, comprises contacting sample with isolated nucleic
 PT acid comprising sequence of exon 1b and detecting hybridized products

XX Disclosure; Fig 12; 134pp; English.

PS Mutations in or loss of the p53 gene occur in more than 50% of

XX human tumours and tumour cell lines, but functional inactivation of

CC the p53 pathway occurs in a much larger proportion of tumours. In

CC many cases the mechanism of functional inactivation of the p53 gene

CC remains unknown but p53 has been found to act in cooperation with

CC INK1. Functional cooperation between INK1 and p53 suggested that

CC INK1 encoded a tumour suppressor protein that functioned within the

CC p53 pathway. This data suggested a possible role for INK1 in head

CC and neck cancers and chromosomal location of the INK1 placed it

CC within a region that is frequently rearranged in head and neck

CC cancers. Large scale analysis of tumours involving INK1 has not

CC revealed mutations in INK1 nor significant variations in its

CC expression suggesting that INK1 was not a useful gene to study in

CC cancer etiology. However, alternative initiation exons of the INK1

CC gene, each having their own promoter have been discovered.

CC Expression of one promoter (1a) produces a protein identical to

CC INK1. Expression of a second promoter (1b) produces a protein having

CC an identical C-terminal fragment to INK1 but an additional 104

CC N-terminal amino acids. The newly discovered protein has been

CC designated p37ING1 (Wild type: p37ING1). p37ING1 has the

CC characteristics of an oncogene. When overexpressed in cells (even

CC those expressing wild type p53) p37ING1 is able to cause

CC proliferation or transformation of those cells. Thus detecting a

CC nucleic acid encoding exon 1b of INK1 by hybridisation with an

CC isolated nucleic acid having the sequence of exon 1b of INK1

CC or its antisense sequence can identify individuals expressing the

CC oncogenic form of INK1. Novel peptide sequences taken from the 104

CC N-terminal peptide of p37ING1 can also be used to raise antibodies

CC that can also be used in detection methods for the p37ING1 variant.

CC The polypeptides may be useful in gene therapy for treatment of cell

CC proliferation disorders, especially cancers and for diagnosing and

CC studying cancers.

XX

SQ Sequence 279 AA;

Query Match 82.9%; Score 34; DB 21; Length 279;

Best Local Similarity 57.1%; Pred. No. 51;

Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

OY 1 KKRIMHC 7

|:|:|

Db 67 KRRVLC 73

RESULT 4

AA048146

ID AAG48146 standard; Protein; 508 AA.

XX

AC AAG48146;

XX

DT 18-OCT-2000 (first entry)

XX

DE Arabidopsis thaliana protein fragment SEQ ID NO: 60770.

XX

KW Protein identification; signal transduction pathway; metabolic pathway;

KW hybridisation assay; genetic mapping; gene expression control; promoter;

KW termination sequence.

XX

OS Arabidopsis thaliana.

XX

PN EP1033405-A2.

XX

PD 06-SEP-2000.

XX

PF 25-FEB-2000; 2000EP-0301439.

XX

XX 25-FEB-1999; 99US-0121825.

PR 05-MAR-1999; 99US-0123180.

PR 09-MAR-1999; 99US-0123548.

PR 23-MAR-1999; 99US-0125788.

PR 25-MAR-1999; 99US-0126264.

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Query Match 80.5%; Score 33; DB 21; Length 508;

Best Local Similarity 57.1%; Pred. No. 1.4e+02;

Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|:|:|
Db 236 KRLLHC 242

RESULT 5

AAG48145

ID AAG48145 standard; Protein; 533 AA.

XX AC AAG48145;

XX DT 18-OCT-2000 (first entry)

XX DE Arabidopsis thaliana protein fragment SEQ ID NO: 60769.

XX DE Arabidopsis thaliana protein fragment SEQ ID NO: 60769.

XX KW Protein identification; signal transduction pathway; metabolic pathway;
XX KW hybridisation assay; genetic mapping; gene expression control; promoter;
XX KW termination sequence.

XX OS Arabidopsis thaliana.

XX PN EP1033405-A2.

XX XX 06-SEP-2000.

XX XX 25-FEB-2000; 2000EP-0301439.

XX XX 25-FEB-1999; 99US-0121825.

XX XX 05-MAR-1999; 99US-0123180.

XX XX 09-MAR-1999; 99US-0123548.

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XX XX 25-MAR-1999; 99US-0126264.

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Query Match      80.5%; Score 33; DB 21; Length 533;
Best Local Similarity 57.1%; Pred. No. 1.5e+02;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
Db 261 KRLLHC 267

RESULT 6
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AC AAG48144;
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DT 18-OCT-2000 (first entry)
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DE Arabidopsis thaliana protein fragment SEQ ID NO: 60768.
XX
KW protein identification; signal transduction pathway; metabolic pathway;
KW hybridisation assay; genetic mapping; gene expression control; promoter;
KW termination sequence.
XX
OS Arabidopsis thaliana.
XX
PN EP1033405-A2.
XX
PD 06-SEP-2000.
XX
PF 25-FEB-2000; 2000EP-0301439.
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PR 25-FEB-1999; 99US-0121825.
PR 05-MAR-1999; 99US-0123180.
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PR 14-MAY-1999; 99US-0134370.
PR 18-MAY-1999; 99US-0134768.
PR 19-MAY-1999; 99US-0134941.
PR 20-MAY-1999; 99US-0135124.
PR 21-MAY-1999; 99US-0135353.
PR 24-MAY-1999; 99US-0135629.
PR 25-MAY-1999; 99US-0136021.
PR 27-MAY-1999; 99US-0136382.
PR 28-MAY-1999; 99US-0136782.
PR 01-JUN-1999; 99US-0137222.
PR 03-JUN-1999; 99US-0137528.
PR 04-JUN-1999; 99US-0137502.
PR 07-JUN-1999; 99US-0137724.
PR 08-JUN-1999; 99US-0138094.
PR 10-JUN-1999; 99US-0138540.
PR 10-JUN-1999; 99US-0138847.
PR 14-JUN-1999; 99US-0139119.
PR 16-JUN-1999; 99US-0139452.
PR 16-JUN-1999; 99US-0139453.
PR 17-JUN-1999; 99US-0139492.
PR 18-JUN-1999; 99US-0139454.
PR 18-JUN-1999; 99US-0139455.
PR 18-JUN-1999; 99US-0139456.
PR 18-JUN-1999; 99US-0139457.
PR 18-JUN-1999; 99US-0139458.
PR 18-JUN-1999; 99US-0139459.
PR 18-JUN-1999; 99US-0139460.
PR 18-JUN-1999; 99US-0139461.
PR 18-JUN-1999; 99US-0139462.
PR 18-JUN-1999; 99US-0139463.
PR 18-JUN-1999; 99US-0139750.
PR 18-JUN-1999; 99US-0139763.
PR 21-JUN-1999; 99US-0139817.
PR 22-JUN-1999; 99US-0139899.
PR 23-JUN-1999; 99US-0140353.
PR 23-JUN-1999; 99US-0140354.
PR 24-JUN-1999; 99US-0140695.
PR 28-JUN-1999; 99US-0140823.
PR 29-JUN-1999; 99US-0140991.
PR 30-JUN-1999; 99US-0141287.
PR 01-JUL-1999; 99US-0141842.
PR 01-JUL-1999; 99US-0142154.
PR 02-JUL-1999; 99US-0142055.
PR 06-JUL-1999; 99US-0142390.
PR 08-JUL-1999; 99US-0142803.
PR 09-JUL-1999; 99US-0142920.
PR 12-JUL-1999; 99US-0142977.
PR 13-JUL-1999; 99US-0143542.
PR 14-JUL-1999; 99US-0143624.
PR 15-JUL-1999; 99US-0144005.
PR 16-JUL-1999; 99US-0144085.
PR 16-JUL-1999; 99US-0144086.
PR 19-JUL-1999; 99US-0144325.
PR 19-JUL-1999; 99US-0144331.
PR 19-JUL-1999; 99US-0144332.
PR 19-JUL-1999; 99US-0144333.
PR 19-JUL-1999; 99US-0144334.
PR 19-JUL-1999; 99US-0144335.
PR 20-JUL-1999; 99US-0144352.
PR 20-JUL-1999; 99US-0144632.
PR 20-JUL-1999; 99US-0144884.
PR 21-JUL-1999; 99US-0144814.
PR 21-JUL-1999; 99US-0145086.
PR 21-JUL-1999; 99US-0145088.
PR 22-JUL-1999; 99US-0145085.
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PR 22-JUL-1999; 99US-0145087.
PR 22-JUL-1999; 99US-0145089.
PR 22-JUL-1999; 99US-0145192.
PR 23-JUL-1999; 99US-0145145.
PR 23-JUL-1999; 99US-0145218.
PR 23-JUL-1999; 99US-0145224.
PR 26-JUL-1999; 99US-0145276.
PR 27-JUL-1999; 99US-0145913.
PR 27-JUL-1999; 99US-0145918.
PR 27-JUL-1999; 99US-0145919.
PR 28-JUL-1999; 99US-0145951.
PR 02-AUG-1999; 99US-0146386.
PR 02-AUG-1999; 99US-0146388.
PR 02-AUG-1999; 99US-0146389.
PR 03-AUG-1999; 99US-0147038.
PR 04-AUG-1999; 99US-0147204.
PR 04-AUG-1999; 99US-0147302.
PR 05-AUG-1999; 99US-0147192.
PR 05-AUG-1999; 99US-0147260.
PR 06-AUG-1999; 99US-0147303.
PR 06-AUG-1999; 99US-0147416.
PR 09-AUG-1999; 99US-0147493.
PR 09-AUG-1999; 99US-0147935.
PR 10-AUG-1999; 99US-0148171.
PR 11-AUG-1999; 99US-0148319.
PR 12-AUG-1999; 99US-0148341.
PR 13-AUG-1999; 99US-0148565.
PR 13-AUG-1999; 99US-0148684.
PR 16-AUG-1999; 99US-0149368.
PR 17-AUG-1999; 99US-0149175.
PR 18-AUG-1999; 99US-0149426.
PR 20-AUG-1999; 99US-0149722.
PR 20-AUG-1999; 99US-0149723.
PR 20-AUG-1999; 99US-0149929.
PR 23-AUG-1999; 99US-0149902.
PR 23-AUG-1999; 99US-0149930.
PR 25-AUG-1999; 99US-0150566.
PR 26-AUG-1999; 99US-0150884.
PR 27-AUG-1999; 99US-0151065.
PR 27-AUG-1999; 99US-0151066.
PR 27-AUG-1999; 99US-0151080.
PR 30-AUG-1999; 99US-0151303.
PR 31-AUG-1999; 99US-0151438.
PR 01-SEP-1999; 99US-0151930.
PR 07-SEP-1999; 99US-0152363.
PR 10-SEP-1999; 99US-0153070.
PR 13-SEP-1999; 99US-0153758.
PR 15-SEP-1999; 99US-0154018.
PR 16-SEP-1999; 99US-0154039.
PR 20-SEP-1999; 99US-0154779.
PR 22-SEP-1999; 99US-0155139.
PR 23-SEP-1999; 99US-0155486.
PR 24-SEP-1999; 99US-0155659.
PR 28-SEP-1999; 99US-0156458.
PR 28-SEP-1999; 99US-0156596.
PR 04-OCT-1999; 99US-0157117.
PR 05-OCT-1999; 99US-0157753.
PR 06-OCT-1999; 99US-0157865.
PR 07-OCT-1999; 99US-0158029.
PR 08-OCT-1999; 99US-0158232.
PR 12-OCT-1999; 99US-0158369.
PR 13-OCT-1999; 99US-0159293.
PR 13-OCT-1999; 99US-0159294.
PR 13-OCT-1999; 99US-0159295.
PR 14-OCT-1999; 99US-0159329.
PR 14-OCT-1999; 99US-0159330.
PR 14-OCT-1999; 99US-0159331.
PR 14-OCT-1999; 99US-0159637.
PR 14-OCT-1999; 99US-0159638.
PR 18-OCT-1999; 99US-0159584.
PR 21-OCT-1999; 99US-0160741.
PR 21-OCT-1999; 99US-0160767.
PR 21-OCT-1999; 99US-0160768.

PR 21-OCT-1999; 99US-0160770.
PR 21-OCT-1999; 99US-0160814.
PR 21-OCT-1999; 99US-0160815.
PR 22-OCT-1999; 99US-0160980.
PR 22-OCT-1999; 99US-0160981.
PR 22-OCT-1999; 99US-0160989.
PR 25-OCT-1999; 99US-0161404.
PR 25-OCT-1999; 99US-0161405.
PR 25-OCT-1999; 99US-0161406.
PR 26-OCT-1999; 99US-0161359.
PR 26-OCT-1999; 99US-0161360.
PR 26-OCT-1999; 99US-0161361.
PR 28-OCT-1999; 99US-0161920.
PR 28-OCT-1999; 99US-0161992.
PR 28-OCT-1999; 99US-0161993.
PR 29-OCT-1999; 99US-0162142.

Query Match 80.5%; Score 33; DB 21; Length 564;
Best Local Similarity 57.1%; Pred. NO. 1.6e+02;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
| : : : |
Db 292 KKRLLHC 298

RESULT 7

AAR93552
ID AAR93552 standard; Peptide; 40 AA.

XX AAR93552;

XX 25-JUN-1996 (first entry)

DE Bovine FKBP-13 immunophilin N-terminal peptide.

XX FKBP-13; immunophilin; FK506; rapamycin; rheumatoid arthritis;
KW diabetes; organ transplant; graft versus host disease;
KW immunosuppressant.

XX Bos taurus.

XX US5498597-A.

XX 12-MAR-1996.

PF 17-JAN-1992; 92US-0822966.

PR 17-JAN-1992; 92US-0822966.

XX (DAND) DANA FARBER CANCER INST INC.
XX (HARD) HARVARD COLLEGE.

PI Bierer BE, Burakoff SJ, Schreiber SL;

XX WPI; 1996-159713/16.

XX Purified mammalian FKBP-13 polypeptide capable of binding FK506
XX useful for identifying and studying immunosuppressant drugs

PS Disclosure; Column 8; 12pp; English.

XX This sequence encoding the bovine FKBP-13 N-terminal sequence
XX corresponds to the N-terminal sequence of human FKBP-13. FKBP-13
XX may be used for identifying immunosuppressant drugs, and may be
XX used in combination with immunosuppressant drugs for therapeutic
XX purposes in the treatment of autoimmune diseases e.g. rheumatoid
XX arthritis and type-I diabetes, organ transplant and graft versus
XX host disease. The recombinant form of the protein could be
XX potentially smaller and therefore easier to introduce into cells
XX than intact FKBP-13.

XX Sequence 40 AA;

Query Match 78.0%; Score 32; DB 17; Length 40;
Best Local Similarity 71.4%; Pred. No. 20;
Matches 5; Conservative 1; Mismatches 0; Gaps 0;

QY 1 KKRIMHC 7
DB 14 KKRVDHC 20

RESULT 8
ABG14241
ID ABG14241 standard; Protein: 83 AA.
XX AC ABG14241;
XX DT 18-FEB-2002 (first entry)
XX DE Novel human diagnostic protein #14232.
XX KW Human; chromosome mapping; gene mapping; gene therapy; forensic;
XX KW food supplement; medical imaging; diagnostic; genetic disorder.
XX OS Homo sapiens.
XX PN WO200175067-A2.
XX PD 11-OCT-2001.
XX PF 30-MAR-2001; 2001WO-US08631.
XX PR 31-MAR-2000; 2000US-0540217.
XX PR 23-AUG-2000; 2000US-0649167.
XX PA (HYSE-) HYSEQ INC.
XX PI Drmanac RT, Liu C, Tang YT;
XX WPI: 2001-639362/73.
XX N-PSDB; AAS78428.
XX New isolated polynucleotide and encoded polypeptides, useful in
diagnostics, forensics, gene mapping, identification of mutations
responsible for genetic disorders or other traits and to assess
biodiversity -
XX Claim 20; SEQ ID No 44600; 103pp; English.
XX The invention relates to isolated polynucleotide (I) and
polypeptide (II) sequences. (I) is useful as hybridisation probes,
polymerase chain reaction (PCR) primers, oligomers, and for chromosome
and gene mapping, and in recombinant production of (II). The
polynucleotides are also used in diagnostics as expressed sequence tags
for identifying expressed genes. (I) is useful in gene therapy techniques
to restore normal activity of (II) or to treat disease states involving
(II). (II) is useful for generating antibodies against it, detecting or
quantitating a polypeptide in tissue, as molecular weight markers and as
a food supplement. (II) and its binding partners are useful in medical
imaging of sites expressing (II). (I) and (II) are useful for treating
disorders involving aberrant protein expression or biological activity.
The polypeptide and polynucleotide sequences have applications in
diagnostics, forensics, gene mapping, identification of mutations
responsible for genetic disorders or other traits to assess biodiversity
and to produce other types of data and products dependent on DNA and
amino acid sequences. ABG00010-ABG30377 represent novel human
diagnostic amino acid sequences of the invention.
XX Note: The sequence data for this patent did not appear in the printed
specification, but was obtained in electronic format directly from WIPO
at ftp.wipo.int/pub/published_pct_sequences.
XX Sequence 83 AA;

Query Match 78.0%; Score 32; DB 22; Length 83;
Best Local Similarity 71.4%; Pred. No. 40;
Matches 5; Conservative 1; Mismatches 0; Gaps 0;

QY 1 KKRIMHC 7
DB 48 KKRVDHC 54

Best Local Similarity 83.3%; Pred. No. 40;
Matches 5; Conservative 1; Mismatches 0; Gaps 0;

QY 2 KKRIMHC 7
DB 38 KKRIVHC 43

RESULT 9
AAG76114
ID AAG76114 standard; Protein: 83 AA.
XX AC AAG76114;
XX DT 03-SEP-2001 (first entry)
XX DE Human colon cancer antigen protein SEQ ID NO:6878.
XX KW Human; colon cancer; colon cancer antigen; diagnosis; detection;
XX KW colorectal carcinoma; chromosome 11.
XX OS Homo sapiens.
XX PN WO200122920-A2.
XX PD 05-APR-2001.
XX PF 28-SEP-2000; 2000WO-US26524.
XX PR 29-SEP-1999; 99US-0157137.
XX PR 03-NOV-1999; 99US-0163280.
XX PA (HUMA-) HUMAN GENOME SCI INC.
XX PI Ruben SM, Barash SC, Birse CE, Rosen CA;
XX WPI: 2001-235357/24.
XX N-PSDB; AAH35519.
XX Nucleic acids encoding 4277 human colon cancer-associated polypeptides,
useful for preventing, diagnosing and/or treating colorectal cancers -
XX Claim 11; Page 8320-8322; 9803pp; English.
XX AAH32943 to AAH37195 and AAG73514 to AAG77788 represent human colon
cancer-associated nucleic acid molecules (N) and proteins (P), where
the proteins are collectively known as colon cancer antigens. The colon
cancer antigens have cytostatic activity and can be used in gene
therapy and vaccine production. N and P may be used in the prevention,
diagnosis and treatment of diseases associated with inappropriate P
expression. For example, N and P may be used to treat disorders
associated with decreased expression by rectifying mutations or deletions
in a patient's genome that affect the activity of P by expressing
inactive proteins or to supplement the patients own production of P.
XX Additionally, N may be used to produce the colon cancer-associated Ps,
CC by inserting the nucleic acids into a host cell and culturing the cell
CC to express the proteins. N and P can be used in the prevention, diagnosis
CC and treatment of colorectal carcinomas and cancers. AAH37196 to AAH37204
CC present invention.
CC N.B. Pages 666 to 682 and page 7053 of the sequence listing were
CC missing at time of publication, meaning no sequences are present for
CC SEQ ID NO:1027 to 1052, 7921 and 7922.
XX Sequence 83 AA;

Query Match 78.0%; Score 32; DB 22; Length 83;
Best Local Similarity 71.4%; Pred. No. 40;
Matches 5; Conservative 1; Mismatches 0; Gaps 0;

QY 1 KKRIMHC 7
DB 48 KKRVDHC 54

RESULT 10

AA97245
ID AAY97245 standard; Protein; 94 AA.

XX
AC AAY97245;

XX
DT 19-DEC-2000 (first entry)

XX
DE Human INGB1 isoform N-terminal peptide.

XX
KW p53; tumour; cancer; detection; antibody; hybridisation; exon 1b;
KW INGI1; p33INGI1; p37INGI1; oncogene; gene therapy; diagnosis;
KW proliferation disorder; transformation; transformed cell; mouse.

XX
OS Homo sapiens.

XX
PN WO200046370-A1.

XX
PD 10-AUG-2000.

XX
PF 04-FEB-2000; 2000WO-US02959.

XX
PR 04-FEB-1999; 99US-0118941.

XX
PA (UNII) UNIV ILLINOIS FOUND.

XX
PI Gudkov A, Zeremski M, Gurova KV, Grigorian IA;

XX
DR WPI; 2000-491278/43.

XX
PT Detecting nucleic acid encoding exon 1b of ing1, useful for diagnosing
PT and treating cancer, comprises contacting sample with isolated nucleic
PT acid comprising sequence of exon 1b and detecting hybridized products

XX
PS Claim 26; Figure 7a; 134pp; English.

XX
CC Mutations in or loss of the p53 gene occur in more than 50% of
CC human tumours and tumour cell lines, but functional inactivation of
CC the p53 pathway occurs in a much larger proportion of tumours. In
CC many cases the mechanism of functional inactivation of the p53 gene
CC remains unknown but p53 has been found to act in cooperation with
CC INGI1. Functional cooperation between INGI1 and p53 suggested that
CC INGI1 encoded a tumour suppressor protein that functioned within the
CC p53 pathway. This data suggested a possible role for INGI1 in head
CC and neck cancers and chromosomal location of the INGI1 placed it
CC within a region that is frequently rearranged in head and neck
CC cancers. Large scale analysis of tumours involving INGI1 has not
CC revealed mutations in INGI1 nor significant variations in its
CC expression suggesting that INGI1 was not a useful gene to study in
CC cancer etiology. However, alternative initiation exons of the ing1
CC gene, each having their own promoter have been discovered.
CC Expression of one promoter (1a) produces a protein identical to
CC INGI1. Expression of a second promoter (1b) produces a protein having
CC an identical C-terminal fragment to INGI1 but an additional 104
CC N-terminal amino acids. The newly discovered protein has been
CC designated p37ING1 (Wild type: p33ING1). p37ING1 has the
CC characteristics of an oncogene. When overexpressed in cells (even
CC those expressing wild type p53) p37ING1 is able to cause
CC proliferation or transformation of those cells. Thus detecting a
CC nucleic acid encoding exon 1b of ing1 by hybridisation with an
CC isolated nucleic acid having the sequence of exon 1b of ing1
CC or its antisense sequence can identify individuals expressing the
CC oncogenic form of ing1. Novel peptide sequences taken from the 104
CC N-terminal peptide of p37ING1 can also be used to raise antibodies
CC that can also be used in detection methods for the p37ING1 variant.
CC The polypeptides may be useful in gene therapy for treatment of cell
CC proliferation disorders, especially cancers and for diagnosing and
CC studying cancers.

XX
SQ Sequence 94 AA;

Query Match 78.0%; Score 32; DB 21; Length 94;
Best Local Similarity 57.1%; Pred. No. 45;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
|:|:|:|
Db 67 KRRMLHC 73

RESULT 11

AAR28979
ID AAR28979 standard; protein; 99 AA.

XX
AC AAR28979;

XX
DT 24-MAR-1993 (first entry)

XX
DE Bovine RFBKP.

XX
KW Rapamycin; FK506; binding protein; RFBKP; prollyl isomerase;
KW immunosuppressant; cyclosporin A; macrolide; bovine; thymus; bRFBKP;
KW cis-trans prollyl isomerase activity; FKBP12.

XX
OS Bos taurus.

XX
PN WO9219745-A.

XX
PD 12-NOV-1992.

XX
PF 07-MAY-1992; 92WO-US03993.

XX
PR 08-MAY-1991; 91US-0697113.

XX
PA (VERT-) VERTEX PHARM INC.

XX
PI Harding MW;

XX
DR WPI; 1992-398871/48.

XX
PT New prollyl isomerase and rapamycin FK506 binding protein - useful
PT for screening potential immunosuppressive cpds.

XX
PS Disclosure; Fig 1; 30pp; English.

XX
CC This sequence corresponds to a fragment of a rapamycin FK506 binding
CC protein (RFBKP). RFBKP is a prollyl isomerase structurally related to
CC FK506 which does not bind the immunosuppressive cyclosporin A. RFBKP
CC binds FK506 and rapamycin with quantitatively significant selectivity.
CC RFBKP may be used in screening assays to detect new immunosuppressants
CC and to differentiate rapamycin-like cpds. from FK506-like cpds.
CC Rapamycin is a macrolide which is structurally related to FK506.
CC This RFBKP has been isolated from bovine thymus (bRFBKP) and was found
CC to be of low molecular weight, approx. 16,000, and to have cis-trans
CC prollyl isomerase activity. The N terminal of bRFBKP has been shown to
CC have over 50% homology to the N terminal of FKBP12.

SQ Sequence 99 AA;

Query Match 78.0%; Score 32; DB 13; Length 99;
Best Local Similarity 71.4%; Pred. No. 47;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
|:|:|:|
Db 14 KKRVDHC 20

RESULT 12

AAG03758
ID AAG03758 standard; Protein; 104 AA.

XX
AC AAG03758;

XX

DT XX 06-OCT-2000 (first entry)
DE XX Human secreted protein, SEQ ID NO: 7839.
XX
KW Human; 5' EST; expressed sequence tag; secreted protein; cDNA isolation;
KW gene therapy; chromosome mapping.
XX
OS Homo sapiens.
XX
PN EPI033401-A2.
XX
PD 06-SEP-2000.
XX
XX 21-FEB-2000; 2000EP-0200610.
XX
XX 26-FEB-1999; 99US-0122487.
XX
XX (GEST) GENSET.
XX
XX Dumas Milne Edwards J, Duclert A, Giordano J;
XX
XX WPI: 2000-500381/45.
XX
XX N-PSDB: AAC03764.
XX
XX New nucleic acid that is a 5' expressed sequence tag (5' EST) for
XX obtaining cDNAs and genomic DNAs that correspond to 5'ESTs and for
XX diagnostic, forensic, gene therapy and chromosome mapping procedures -
XX
XX Claim 13; SEQ ID 7839; 71pp + CD-ROM; English.
XX
XX The present sequence is a polypeptide encoded by one of a large number
XX of 5' ESTs derived from mRNAs encoding secreted proteins. The 5' ESTs
XX were prepared from total human RNAs or polyA+ RNAs derived from 30
XX different tissues. EST sequences usually correspond mainly to the 3'
XX untranslated region (UTR) of the mRNA because they are often obtained
XX from oligo-dr primed cDNA libraries. Such ESTs are not well suited for
XX isolating cDNA sequences derived from the 5' ends of mRNAs and even in
XX those cases where longer cDNA sequences have been obtained, the full 5'
XX UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5'
XX ends and can therefore be used to obtain full length cDNAs and genomic
XX DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and
XX chromosome mapping procedures. They are used to obtain upstream
XX regulatory sequences and to design expression and secretion vectors.
XX
XX Sequence 104 AA;
XX
XX Query Match 78.0%; Score 32; DB 21; Length 104;
XX Best Local Similarity 71.4%; Pred. No. 50;
XX Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
XX
XX Qy 1 KKRIMHC 7
XX |||: ||
XX Db 36 KKRVDHC 42
XX
XX RESULT 13
XX AAY03245
XX ID AAY03245 standard; Protein; 128 AA.
XX
XX AC AAY03245;
XX
XX DT 26-AUG-1999 (first entry)
XX
XX DE Amino acid sequence of the human p28-ING1 protein.
XX
XX KW Human; p33-ING1 protein; growth regulation; apoptosis; DNA damage;
XX inhibition; anchorage independent growth; cytotoxic drug; cancer;
XX KW transcriptional activation; immortal cell line; p28-ING1 protein.
XX
XX OS Homo sapiens.
XX
XX Key Location/Qualifiers
XX Misc_Difference 59...269
XX FT

FT XX /note- "p36-ING1 fragment"
XX PN WO9916790-A1.
XX PD 08-APR-1999.
XX XX
XX PF 24-SEP-1998; 98WO-US18179.
XX XX
XX PR 14-JAN-1998; 98US-0006783.
XX PR 26-SEP-1997; 97US-0060138.
XX XX
XX (UNII) UNIV ILLINOIS BOARD OF TRUSTEES.
XX PA (UYTE-) UNIV TECHNOLOGIES INT INC.
XX XX
XX PI Garkavtsev I, Gudkov A, Riabowol K;
XX XX
XX DR WPI; 1999-263685/22.
XX XX
XX PT Use of p33-ING1 peptides
XX
XX PS Example 8; Page 61; 64pp; English.
XX
XX CC This is the amino acid sequence of the human p28-ING1 protein,
XX used in the method of the invention, involving the human p33-ING1
XX protein. The ING1 gene encodes p33-ING1 which can be used to
XX CC modulate the activity of, isolate or detect p53. Expression of the
XX CC ING1 and p53 genes in a mammalian cell results in normal growth
XX CC regulation anchorage-dependent growth and apoptosis as a response
XX CC to irreversible DNA damage and other cellular insult. Inhibition of
XX CC expression of either gene results in a loss of cellular growth
XX CC control, anchorage independent growth, inhibition of apoptosis
XX CC and resistance to radiation and cytotoxic drugs. The p33-ING1 is a
XX CC component of the p53 signalling pathway that cooperates with p53 in
XX CC negative regulation of cell proliferation by modulating p53 dependent
XX CC transcriptional activation. Biological function of p53 signalling
XX CC pathway can therefore be regulated (both enhanced or suppressed) by
XX CC modulating p33-ING1 activity. The modulation of p33-ING1 activity can
XX CC be used for the stimulation or restoration of the p53 pathway in
XX CC anti cancer therapy or for the suppression of the p53 pathway to
XX CC defend sensitive tissues from genotoxic stress or for the generation
XX CC of immortal cell lines.
XX
XX SQ Sequence 128 AA;
XX
XX Query Match 78.0%; Score 32; DB 20; Length 128;
XX Best Local Similarity 57.1%; Pred. No. 60;
XX Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 KKRIMHC 7
XX |||: ||
XX Db 67 KKRMLHC 73
XX
XX RESULT 14
XX AAB87656
XX ID AAB87656 standard; protein; 137 AA.
XX
XX AC AAB87656;
XX
XX DT 15-MAY-2001 (first entry)
XX
XX DE Bovine mammary tissue derived protein #47.
XX
XX KW Bovine; mammary gland; cancer; tumour; angiogenesis.
XX
XX OS Bos taurus.
XX
XX PN WO200114553-A1.
XX
XX XX
XX PD 01-MAR-2001.
XX
XX PF 23-AUG-2000; 2000WO-NZ00166.
XX
XX XX

PR 23-AUG-1999; 99US-0150330.
XX (GENE-) GENESIS RES & DEV CORP LTD.
PA (NZPA-) NEW ZEALAND PASTORAL AGRIC RES INST LTD.
XX
XX Havukkala IJ, Gleen M, Grigor MR, Molenaar AJ;
XX WPI; 2001-226619/23.
XX
XX New polypeptides and polynucleotides encoding the polypeptides, which
PT are expressed in bovine mammary gland tissue, useful for stimulating
PT mammary gland growth or function, or inducing differentiation of milk
PT producing cells -
XX
XX Claim 11; Page 80; 97pp; English.
XX
XX The present invention relates to proteins derived from bovine
CC mammary gland cells. The invention is useful for stimulating
CC bovine mammary gland cell growth and function, inhibiting the
CC growth of various mammary gland cancer cells, inhibiting
CC angiogenesis and vascularization of tumours, or modulating
CC the growth of blood vessels in a mammal.
XX
SQ Sequence 137 AA;
Query Match 78.0%; Score 32; DB 22; Length 137;
Best Local Similarity 71.4%; Pred. No. 64;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Qy 1 KKRIMHC 7
Db 43 KKRVDHC 49
RESULT 15
AAR93551
ID AAR93551 standard; Protein; 141 AA.
XX
AC AAR93551;
XX
DT 25-JUN-1996 (first entry)
XX
XX Human FKBP-13 immunophilin protein.
DE
XX FKBP-13; immunophilin; FK506; rapamycin; rheumatoid arthritis;
KW diabetes; organ transplant; graft versus host disease;
KW immunosuppressant.
XX
OS Homo sapiens.
XX
XX Key Location/Qualifiers
FH Peptide 1..21
FT /label= sig_peptide
FT Misc-difference 22..61
FT /note= "corresponds to bovine thymus FKBP-13 N-
FT terminal sequence"
FT Misc-difference 117..120
FT /note= "endoplasmic reticulum retention sequence"
XX
PN US5498597-A.
XX
XX 12-MAR-1996.
XX
XX 17-JAN-1992; 92US-0822966.
XX
XX 17-JAN-1992; 92US-0822966.
XX
XX (DAND) DANA FARBER CANCER INST INC.
PA (HARD) HARVARD COLLEGE.
XX
XX Bierer BE, Burakoff SJ, Schreiber SL;
XX WPI; 1996-159713/16.
DR

DR N-PSDB; AAT18037.
XX
XX Purified mammalian FKBP-13 polypeptide capable of binding FK506
PT useful for identifying and studying immunosuppressant drugs
XX
XX Claim 1; Fig.1; 12pp; English.
XX
XX The FKBP-13 protein may be used for identifying immunosuppressant
CC drugs, and may be used in combination with immunosuppressant drugs
CC for therapeutic purposes in the treatment of autoimmune diseases e.g.
CC rheumatoid arthritis and type-1 diabetes, organ transplant and
CC graft versus host disease. The recombinant form of the protein
CC could be potentially smaller and therefore easier to introduce
CC into cells than intact FKBP-13.
XX
XX Sequence 141 AA;
SQ
Query Match 78.0%; Score 32; DB 17; Length 141;
Best Local Similarity 71.4%; Pred. No. 66;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Qy 1 KKRIMHC 7
Db 35 KKRVDHC 41
Search completed: November 1, 2002, 14:47:06
Job time : 3.58682 secs

GenCore version 5.1.3
Copyright (c) 1993 - 2002 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:08 ; Search time 1.45338 Seconds
(without alignments)
952.238 Million cell updates/sec

Title: US-09-606-129A-19
Perfect score: 46
Sequence: 1 QKLCCHQKK 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

SPTREMBL19:*
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phase:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriap:*
17: sp_archaeap:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	37	80.4	636	12 O90142	O90142 spodoptera
2	37	80.4	1063	12 Q9J844	Q9J844 spodoptera
3	35	76.1	295	11 Q9CY64	Q9CY64 mus musculus
4	35	76.1	303	11 Q9DD21	Q9DD21 mus musculus
5	35	76.1	420	10 O22019	O22019 cyanidiosch
6	34	73.9	208	5 Q94164	Q94164 caenorhabdi
7	34	73.9	322	4 Q9BSM2	Q9BSM2 homo sapien
8	34	73.9	409	11 Q9D3R6	Q9D3R6 mus musculus
9	34	73.9	522	4 Q9H8F4	Q9H8F4 homo sapien
10	34	73.9	547	3 Q74308	Q74308 schizosacch
11	34	73.9	790	4 Q9NVK9	Q9NVK9 homo sapien
12	34	73.9	1188	5 Q96143	Q96143 plasmodium
13	34	73.9	1295	3 O13348	O13348 magnaporthe
14	34	73.9	1473	11 Q63625	Q63625 rattus norv
15	34	73.9	1654	4 Q9PIY6	Q9PIY6 homo sapien
16	33	71.7	261	4 Q9H1N6	Q9H1N6 homo sapien

17	33	71.7	263	17 Q9YDU2	Q9YDU2 aeropyrum p
18	33	71.7	266	2 P96301	P96301 alcaligenes
19	33	71.7	273	12 Q9PYW7	Q9PYW7 xestia c-ni
20	33	71.7	445	10 Q9ZPL5	Q9ZPL5 nicotiana t
21	33	71.7	540	8 Q9MT29	Q9MT29 solanum tub
22	33	71.7	566	4 Q9H2S0	Q9H2S0 homo sapien
23	33	71.7	588	4 Q9ULU1	Q9ULU1 homo sapien
24	33	71.7	673	11 Q9QVT4	Q9QVT4 mus sp. mpl
25	33	71.7	773	10 Q80631	Q80631 arabidopsis
26	33	71.7	1247	5 Q17461	Q17461 caenorhabdi
27	32	69.6	52	16 Q98C26	Q98C26 rhizobium 1
28	32	69.6	87	5 Q9NSN6	Q9NSN6 caenorhabdi
29	32	69.6	125	4 Q96KV9	Q96KV9 homo sapien
30	32	69.6	159	4 Q96KW0	Q96KW0 homo sapien
31	32	69.6	163	2 Q9EUC2	Q9EUC2 escherichia
32	32	69.6	221	17 Q97ZS9	Q97ZS9 sulfolobus
33	32	69.6	229	17 Q97GH5	Q97GH5 sulfolobus
34	32	69.6	312	11 Q9CSE2	Q9CSE2 mus musculu
35	32	69.6	336	4 Q9H495	Q9H495 homo sapien
36	32	69.6	380	5 Q21866	Q21866 caenorhabdi
37	32	69.6	397	4 Q9H497	Q9H497 homo sapien
38	32	69.6	397	4 Q9H6E7	Q9H6E7 homo sapien
39	32	69.6	422	10 Q9SSP1	Q9SSP1 arabidopsis
40	32	69.6	462	5 Q9U0E3	Q9U0E3 strongyloce
41	32	69.6	465	5 Q9XW94	Q9XW94 caenorhabdi
42	32	69.6	474	10 Q80588	Q80588 arabidopsis
43	32	69.6	544	10 Q943X8	Q943X8 oryza sativ
44	32	69.6	548	5 Q20367	Q20367 caenorhabdi
45	32	69.6	590	2 Q45490	Q45490 bacillus st

ALIGNMENTS

RESULT 1

O90142 ID O90142 PRELIMINARY; PRT; 636 AA.
AC O90142;
DT 01-NOV-1998 (TREMBLrel. 08, Created)
DT 01-NOV-1998 (TREMBLrel. 08, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE DNA POLYMERASE (FRAGMENT).
GN DPOL.
OS Spodoptera exigua nucleopolyhedrovirus.
OC Viruses; dsDNA viruses, no RNA stage; Baculoviridae;
OC Nucleopolyhedrovirus.
OX NCBI_TaxID=10454;
RN [1]
RP SEQUENCE FROM N.A.
RA Bulach D.M., Kumar C.A., Zaia A., Liang B., Tribe D.E.;
RT "Group II Nucleopolyhedrovirus Subgroups Revealed by Phylogenetic
RT Analysis of Polyhedrin and DNA Polymerase Gene Sequences";
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
CC -!- CATALYTIC ACTIVITY: N DEOXYNUCLEOSIDE TRIPHOSPHATE - N
CC PYROPHOSPHATE + DNA(N).
CC -!- SIMILARITY: BELONGS TO DNA POLYMERASE TYPE-B FAMILY.
DR EMBL; AF068186; AAC33749.1; -;
DR InterPro; IPR002064; DNA_pol_B.
DR Pfam; PF00136; DNA_pol_B; 1.
DR Pfam; PF03104; DNA_pol_B_exo; 1.
DR PRINTS; PR00106; DNAPOLB.
DR SMART; SM00486; POLBc; 1.
KW DNA replication; DNA-binding; DNA-directed DNA polymerase.
FT NON_TER 1
FT NON_TER 636
SQ SEQUENCE 636 AA; 73837 MW; 9BDB36475B07DCD1 CRC64;

Query Match 80.4%; Score 37; DB 12; Length 636;
Best Local Similarity 85.7%; Pred. No. 20;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 2 KLCCHQKK 8
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Db 392 KLCHQK 398
RESULT 2
Q9J844 PRELIMINARY; PRT; 1063 AA.
AC Q9J844;
DT 01-OCT-2000 (TrEMBLrel. 15, Created)
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE ORF93 DNA POLYMERASE.
OS Spodoptera exigua nucleopolyhedrovirus.
OC Viruses; dsDNA viruses, no RNA stage; Baculoviridae;
OC Nucleopolyhedrovirus.
OX NCBI_TaxID=10454;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=20036646; PubMed=10567663;
RA IJkel W.F., van Strien E.A., Heldens J.G., Broer R., Zuidema D.,
RA Goldbach R.W., Vlask J.M.;
RT "Sequence and organization of the spodoptera exigua multicapsid
RT nucleopolyhedrovirus genome.";
RL J. Gen. Virol. 80:3289-3304(1999).
RN [2]
RP SEQUENCE FROM N.A.
RA IJkel W.F.J., van Strien E.A., Heldens J.G.M., Broer R., Zuidema D.,
RA Goldbach R.W., Vlask J.M.;
RL Submitted (JUL-1999) to the EMBL/GenBank/DBJ databases.
CC -1- CATALYTIC ACTIVITY: N DEOXYNUCLEOSIDE TRIPHOSPHATE = N
CC PYROPHOSPHATE + DNA(N).
CC -1- SIMILARITY: BELONGS TO DNA POLYMERASE TYPE-B FAMILY.
DR EMBL; AF169823; AAF3622.1; -
DR InterPro: IPR002064; DNA_pol_B.
DR Pfam; PF001136; DNA_pol_B; 1.
DR Pfam; PF031104; DNA_pol_B_exo; 1.
DR PRINTS; PR00106; DNAPOLB.
DR SMART; SM00486; POLBc; 1.
DR DNA replication; DNA-binding; DNA-directed DNA polymerase.
KW SEQUENCE 1063 AA; 123109 MW; 471603FAA92B9A10 CRC64;
SQ SEQUENCE 1063 AA; 123109 MW; 471603FAA92B9A10 CRC64;

Query Match 80.4%; Score 37; DB 12; Length 1063;
Best Local Similarity 85.7%; Pred. No. 32;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KLCHQK 8
|:||||:
Db 557 KLCHQK 563

RESULT 3
Q9CY64 PRELIMINARY; PRT; 295 AA.
AC Q9CY64;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE 2500001N03RIK PROTEIN.
GN 2500001N03RIK.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX STRAIN=C57BL/6J; TISSUE=EMBRYONIC LIVER;
RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kuehl P., Lewis S., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Sakamoto N.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashizaki Y.;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL; AK002231; BAB21950.1; -
DR MGD; MGI:1915580; 0610006Allirik.
DR InterPro: IPR000683; GFO_IDH_MCA.
DR Pfam; PF01408; GFO_IDH_MCA; 1.
SQ SEQUENCE 303 AA; 34491 MW; 52D8A3B02EE956EB CRC64;

Query Match 76.1%; Score 35; DB 11; Length 303;
Best Local Similarity 62.5%; Pred. No. 25;

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RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Sakamoto N.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashizaki Y.;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL; AK010847; BAB27219.1; -
DR MGD; MGI:1917355; 2500001N03RIK.
DR InterPro: IPR000683; GFO_IDH_MCA.
DR Pfam; PF01408; GFO_IDH_MCA; 1.
SQ SEQUENCE 295 AA; 33524 MW; F2E1682BD77032A4 CRC64;

Query Match 76.1%; Score 35; DB 11; Length 295;
Best Local Similarity 62.5%; Pred. No. 24;
Matches 5; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHQK 8
|:||||:
Db 288 QKLCHQK 295

RESULT 4
Q9DD21 PRELIMINARY; PRT; 303 AA.
AC Q9DD21;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE 0610006Allirik PROTEIN.
GN 0610006Allirik.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX STRAIN=C57BL/6J; TISSUE=KIDNEY;
RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Sakamoto N.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashizaki Y.;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL; AK002231; BAB21950.1; -
DR MGD; MGI:1915580; 0610006Allirik.
DR InterPro: IPR000683; GFO_IDH_MCA.
DR Pfam; PF01408; GFO_IDH_MCA; 1.
SQ SEQUENCE 303 AA; 34491 MW; 52D8A3B02EE956EB CRC64;

Query Match 76.1%; Score 35; DB 11; Length 303;
Best Local Similarity 62.5%; Pred. No. 25;

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Matches 5; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QKLCHKK 8

Db 288 QRLCHRKQ 295

RESULT 5

O22019
ID Q22019 PRELIMINARY; PRT; 420 AA.
AC Q22019;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE ORF420.
OS Cyanidioschyzon merolae.
OC Eukaryota; Rhodophyta; Bangiophyceae; Cyanidioschyzon.
OX NCBI_TaxID=45157;
RN [1]
RP SEQUENCE FROM N.A.
RA Ohta N.;
RL J. Plant Res. 110:235-245(1997).
DR EMBL; D63675; BAA22815.1; -.
DR InterPro; IPR004161; GTP_EFTU_D2.
DR InterPro; IPR000178; IF2.
DR InterPro; IPR001950; SUIL.
DR Pfam; PF03144; GTP_EFTU_D2; 1.
DR ProDom; PD186100; IF2; 1.
DR PROSITE; PS01118; SUIL_1; UNKNOWN_1.
SQ SEQUENCE 420 AA; 47691 MW; A6CAE107B2484E19 CRC64;

Query Match 76.1%; Score 35; DB 10; Length 420;

Best Local Similarity 85.7%; Pred. No. 34;

Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHKK 7

Db 236 QKLCHKPK 242

RESULT 6

O94164

ID Q94164 PRELIMINARY; PRT; 208 AA.

AC Q94164;

DT 01-FEB-1997 (TrEMBLrel. 02, Created)

DT 01-FEB-1997 (TrEMBLrel. 02, Last sequence update)

DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)

DE HYPOTHETICAL 24.0 KDA PROTEIN.

GN C10G8.2.

OS Caenorhabditis elegans.

OC Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;

OC Rhabditidae; Pelodermidae; Caenorhabditis.

OX NCBI_TaxID=6239;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN-BRISTOL N2;

RX MEDLINE=99069613; PubMed=9851916;

RA None;

RT "Genome sequence of the nematode C. elegans: a platform for

investigating biology. The C. elegans Sequencing Consortium.";

RL Science 282:2012-2018(1998).

RN [2]

RP SEQUENCE FROM N.A.

RC STRAIN-BRISTOL N2;

RA Blanchard M., Bradshaw H.;

RT "The sequence of C. elegans cosmid C10G8.";

RL Submitted (OCT-1996) to the EMBL/GenBank/DBJ databases.

RN [3]

RP SEQUENCE FROM N.A.

RC STRAIN-BRISTOL N2;

RA Waterston R.;

RT "Direct Submission.";

RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.

DR EMBL; U70857; AAB09170.1; -.

DR InterPro; IPR002223; Kunitz_BPTI.

DR Pfam; PF00014; Kunitz_BPTI; 1.

DR SMART; SM00131; KU; 1.

DR PROSITE; PS00280; BPTI_KUNITZ_1; 1.

DR PROSITE; PS00279; BPTI_KUNITZ_2; 1.

KW Hypothetical protein; Serine protease inhibitor.

SQ SEQUENCE 208 AA; 24008 MW; 779AB4A8948E67B0 CRC64;

Query Match 73.9%; Score 34; DB 5; Length 208;

Best Local Similarity 83.3%; Pred. No. 28;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 3 LCHQKK 8

Db 172 MCHQKK 177

RESULT 7

O9BSM2

ID O9BSM2 PRELIMINARY; PRT; 322 AA.

AC O9BSM2;

DT 01-JUN-2001 (TrEMBLrel. 17, Created)

DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)

DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)

DE HYPOTHETICAL 34.9 KDA PROTEIN (FRAGMENT).

OS Homo sapiens (Human).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

OX NCBI_TaxID=9606;

RN [1]

RP SEQUENCE FROM N.A.

RC TISSUE-LYMPH, LYMPHOMA;

RA Strausberg R.;

RL Submitted (MAR-2001) to the EMBL/GenBank/DBJ databases.

DR EMBL; BC004950; AAH04950.1; -.

KW Hypothetical protein.

FT NON_TER 1

SQ SEQUENCE 322 AA; 34916 MW; 33C65E86B8F9D761 CRC64;

Query Match 73.9%; Score 34; DB 4; Length 322;

Best Local Similarity 71.4%; Pred. No. 42;

Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHKK 7

Db 274 QKICHSK 280

RESULT 8

O9D3R6

ID O9D3R6 PRELIMINARY; PRT; 409 AA.

AC O9D3R6;

DT 01-JUN-2001 (TrEMBLrel. 17, Created)

DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)

DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)

DE 4933439B08RIK PROTEIN.

GN 4933439B08RIK.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OX NCBI_TaxID=10090;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN-C57BL/6J; TISSUE-TESTIS;

RX MEDLINE=21085660; PubMed=11217851;

RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,

RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

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RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Wagner T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohsaki S.,
RA Hayashizaki Y.,
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL; AK017114; BAB30604.1; -.
DR MGD; MGI:1918456; 4933439B08Rik.
DR InterPro; IPR003593; AAA.
DR InterPro; IPR003959; AAA_subfam.
DR Pfam; PF00004; AAA; 1.
DR SMART; SM00382; AAA; 1.
KW ATP-binding.
SQ SEQUENCE 409 AA; 46131 MW; 9600B20080DC9749 CRC64;

Query Match 73.9%; Score 34; DB 11; Length 409;
Best Local Similarity 83.3%; Pred. No. 52;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KLCHKQK 7
Db 122 KICHQK 127

RESULT 9
Q9H8F4 PRELIMINARY; PRT; 522 AA.
AC Q9H8F4;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DE CDNA FLJ13679 FIS, CLONE PLACE2000006.
OS Homo sapiens (Human)
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
ON NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RA Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y.,
RA Nishikawa T., Nagai K., Sugano S., Takahashi-Fujii A., Hara H.,
RA Tanase T., Nomura Y., Togiya S., Komai F., Hara R., Takeuchi K.,
RA Arita M., Nabekura T., Ishii S., Kawai Y., Saito K., Yamamoto J.,
RA Wakamatsu A., Nakamura Y., Nagahari K., Masuho Y., Oshima A.;
RA "NEDO human cDNA sequencing project.";
RT Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AK023741; BAB14663.1; -.
DR InterPro; IPR001849; PH.
DR InterPro; IPR000219; RhoGEF.
DR Pfam; PF00169; PH; 1.
DR Pfam; PF00621; RhoGEF; 1.
DR SMART; SM00233; PH; 1.
DR SMART; SM00325; RhoGEF; 1.
DR PROSITE; PS50003; PH_DOMAIN; 1.
SQ SEQUENCE 522 AA; 59222 MW; F01A6BF70D2920F9 CRC64;

Query Match 73.9%; Score 34; DB 4; Length 522;
Best Local Similarity 62.5%; Pred. No. 64;
Matches 5; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHKQK 8
Db 157 QELCHQOE 164

RESULT 10

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074308 PRELIMINARY; PRT; 547 AA.
ID 074308;
AC 074308;
DT 01-NOV-1998 (TrEMBLrel. 08, Created)
DT 01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE HYPOTHETICAL ZINC-FINGER PROTEIN.
GN SPBC15D4.02.
OS Schizosaccharomyces pombe (Fission yeast).
OC Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
OC Schizosaccharomycetales; Schizosaccharomycetaceae;
OC NCBI_TaxID=4896;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=972H-;
RA Lyne M., Rajandream M.A., Barrell B.G., Lucas M., Gaillardin C.;
RA Submitted (AUG-1997) to the EMBL/GenBank/DBJ databases.
CC -!- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
CC -!- SIMILARITY: CONTAINS 1 FUNGAL-TYPE BINUCLEAR CLUSTER DOMAIN.
DR EMBL; AL031349; CAA20477.1; -.
DR HSSP; P25502; IZME.
DR InterPro; IPR001138; ZN2_CY6_fungal.
DR Pfam; PF00172; ZN_Clus; 1.
DR SMART; SM00066; GAL4; 1.
DR PROSITE; PS00463; ZN2_CY6_FUNGAL_1; 1.
DR PROSITE; PS50048; ZN2_CY6_FUNGAL_2; 1.
KW DNA-binding; Metal-binding; Nuclear protein; Transcription regulation;
KW Zinc.
SQ SEQUENCE 547 AA; 59641 MW; A65FD7D03996CD18 CRC64;

Query Match 73.9%; Score 34; DB 3; Length 547;
Best Local Similarity 71.4%; Pred. No. 67;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHKQK 7
Db 427 RKLCHK 433

RESULT 11
Q9NVK9 PRELIMINARY; PRT; 790 AA.
AC Q9NVK9;
DT 01-OCT-2000 (TrEMBLrel. 15, Created)
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE CDNA FLJ10665 FIS, CLONE NT2RP2006200.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
ON NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y.,
RA Nishikawa T., Nagai K., Sugano S., Ishibashi T., Fujimori K.,
RA Tanai H., Kimata M., Watanabe M., Hiraoka S., Ishii S., Kawai Y.,
RA Saito K., Yamamoto J., Wakamatsu A., Nakamura Y., Nagahari K.,
RA Masuho Y., Kanehori K.;
RA "NEDO human cDNA sequencing project.";
RT Submitted (FEB-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AK001527; BAA91741.1; -.
DR InterPro; IPR001849; PH.
DR InterPro; IPR000219; RhoGEF.
DR Pfam; PF00169; PH; 1.
DR Pfam; PF00621; RhoGEF; 1.
DR SMART; SM00233; PH; 1.
DR SMART; SM00325; RhoGEF; 1.
DR PROSITE; PS50003; PH_DOMAIN; 1.
SQ SEQUENCE 790 AA; 88976 MW; A3B9F4972CE2D509 CRC64;

Query Match 73.9%; Score 34; DB 4; Length 790;
Best Local Similarity 62.5%; Pred. No. 94;

```

Matches 5; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QKLCHKK 8

Db 157 QELCHQOE 164

RESULT 12

O96143 ID O96143 PRELIMINARY; PRT; 1188 AA.
AC O96143;
DT 01-MAY-1999 (TrEMBLrel. 10, Created)
DT 01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
DT 01-MAY-1999 (TrEMBLrel. 10, Last annotation update)
DE PROTEIN WITH 5'-3' EXONUCLEASE DOMAIN (KEM-1 FAMILY).
GN PR0205C.
OS Plasmodium falciparum.
OC Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
OX NCBI_TaxID=5833;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=99021743; PubMed=9804551;
RA Gardner M.J., Tettelin H., Carucci D.J., Cummings L.M., Aravind L., Koonin E.V., Shallow S., Mason T., Yu K., Fujii C., Pederson J., Shen K., Jing J., Aston C., Lai Z., Schwartz D.C., Perterson M., Salzberg S., Zhou L., Sutton G.G., Clayton R., White O., Smith H.O., Fraser C.M., Adams M.D., Venter J.C., Hoffman S.L.
RA "Chromosome 2 sequence of the human malaria parasite Plasmodium falciparum."
RT Science 282:1126-1132(1998).
RL EMBL; AE001380; AAC71830.1; -.
DR Exonuclease.
KW SEQUENCE 1188 AA; 142895 MW; BF767FC8532EBAC9 CRC64;

Query Match 73.9%; Score 34; DB 5; Length 1188;

Best Local Similarity 71.4%; Pred. No. 1.4e+02;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QKLCHKK 7

Db 1117 QELCHKK 1123

RESULT 13

O13348 ID O13348 PRELIMINARY; PRT; 1295 AA.
AC O13348;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE REVERSE TRANSCRIPTASE
OS Magnaporthe grisea (Rice blast fungus) (Pyricularia grisea).
OC Eukaryota; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes;
OC Sordariomycetes incertae sedis; Magnaportheaceae; Magnaporthe.
OX NCBI_TaxID=148305;
RN [1]
RP SEQUENCE FROM N.A.
RA Meyn III M.A., Farrall L., Valent B., Chumley F.G., Orbach M.J.;
RT "Magnaporthe grisea repeated DNA element MGR583 is a member of the LINE-1 class of polyA retrotransposons."
RL Submitted (AUG-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF018033; AAB71689.1; -.
DR InterPro; IPR002156; RNaseH.
DR InterPro; IPR000477; RVTse.
DR Pfam; PF00075; RNaseH; 1.
DR Pfam; PF00078; rvt; 1.
KW RNA-directed DNA polymerase.
SQ SEQUENCE 1295 AA; 144308 MW; E811059B750D5421 CRC64;

Query Match

Best Local Similarity

Matches 5; Conservative

73.9%; Score 34; DB 3; Length 1295;

71.4%; Pred. No. 1.5e+02;

Matches 2; Mismatches 0; Indels 0; Gaps 0;

Qy 2 KLCHKK 8

Db 33 ELCHKK 39

RESULT 14

O63625 ID O63625 PRELIMINARY; PRT; 1473 AA.
AC O63625;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE RA9.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=HIPPOCAMPUS;
RX MEDLINE=96293459; PubMed=8692929;
RA Yuryev A., Patturajan M., Litington Y., Joshi R.V., Gentile C., Gebara M., Corden J.L.;
RA "The C-terminal domain of the largest subunit of RNA polymerase II interacts with a novel set of serine/arginine-rich proteins."
RL Proc. Natl. Acad. Sci. U.S.A. 93:6975-6980(1996).
DR EMBL; U49057; AAC52658.1; -.
SQ SEQUENCE 1473 AA; 161204 MW; 949EE6F5873989BF CRC64;

Query Match 73.9%; Score 34; DB 11; Length 1473;

Best Local Similarity 71.4%; Pred. No. 1.6e+02;

Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHKK 7

Db 1425 QKCHKK 1431

RESULT 15

O9PIY6 ID O9PIY6 PRELIMINARY; PRT; 1654 AA.
AC O9PIY6;
DT 01-OCT-2000 (TrEMBLrel. 15, Created)
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE KIAA1542 PROTEIN (FRAGMENT).
GN KIAA1542.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=20277482; PubMed=10819331;
RA Nagase T., Kikuno R., Ishikawa K., Hirose M., Ohara O.;
RT "Prediction of the coding sequences of unidentified human genes.XVII.The complete sequences of 100 new cDNA clones from brain DNA Res. 7:143-150(2000).
DR EMBL; AB040975; BAA96066.1; -.
DR HSSP; P28990; 1CHC.
DR InterPro; IPR002219; DAG_PE-bind.
DR InterPro; IPR001965; PHD.
DR InterPro; IPR001841; Znf_ring.
DR Pfam; PF00628; PHD; 1.
DR Pfam; SM00109; C1; 1.
DR SMART; SM00184; RING; 2.
DR SMART; SM00184; RING; 2.
DR PROSITE; PS00518; ZINC_FINGER_C3HC4; 1.
KW Zinc-finger.
FT NON_TER 1
SQ SEQUENCE 1654 AA; 179053 MW; 125CF71A84AFB218 CRC64;

Query Match 73.9%; Score 34; DB 4; Length 1654;
Best Local Similarity 71.4%; Pred. No. 1.8e+02;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHQK 7
||:||||
Db 1606 QKICHSK 1612

Search completed: November 1, 2002, 14:49:49
Job time : 4.45338 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:41:32 ; Search time 0.411576 Seconds
(without alignments)
752.611 Million cell updates/sec

Title: US-09-606-129A-19
Perfect score: 46
Sequence: 1 QKLCQKK 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 105224 seqs, 38719550 residues
Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result NO.	Score	Query Match	Length	ID	Description
1	46	100.0	295	1 BIEA_RAT	P46844 rattus norv
2	36	78.3	654	1 CBPI_YEAST	P07252 saccharomyc
3	33	71.7	135	1 Z145_HUMAN	Q05516 homo sapien
4	32	69.6	135	1 VEG_PAPVE	P11331 european el
5	32	69.6	210	1 YOS3_CAEEL	Q09311 caenorhabdi
6	32	69.6	272	1 3DHQ_ACICA	Q59087 acinetobact
7	32	69.6	272	1 DAPF_CLOPE	Q46185 clostridium
8	32	69.6	345	1 TF2B_YEAST	P29055 saccharomyc
9	32	69.6	357	1 Y303_MYCGE	P47545 mycoplasma
10	32	69.6	595	1 PRIM_CHLTR	O84799 chlamydia t
11	32	69.6	609	1 FETA_GORGO	P28050 gorilla gor
12	32	69.6	609	1 FETA_HUMAN	P02771 homo sapien
13	32	69.6	645	1 Y081_CAEEL	P34617 caenorhabdi
14	32	69.6	895	1 SY1_MYCGE	P47587 mycoplasma
15	32	69.6	1593	1 AT12_HUMAN	P58397 homo sapien
16	31	67.4	75	1 EX7S_BACSU	P54522 bacillus su
17	31	67.4	169	1 NEUT_BOVIN	P01156 bos taurus
18	31	67.4	170	1 NEUT_CANFA	P10673 canis fami
19	31	67.4	271	1 YSM4_CAEEL	Q10124 caenorhabdi
20	31	67.4	478	1 ARDE_CHLTR	O84375 chlamydia t
21	31	67.4	498	1 NFS1_SCHPO	O74351 schizosacch
22	31	67.4	631	1 Z179_RAT	O70418 rattus norv
23	31	67.4	677	1 NRGL_XENLA	Q93383 xenopus lae
24	31	67.4	892	1 L0L2_XENLA	Q99088 xenopus lae
25	31	67.4	1207	1 DPOL_ASFB7	P42489 african swi
26	31	67.4	1244	1 DPOL_ASFL6	P43139 african swi
27	31	67.4	1256	1 FLII_DROME	Q24020 drosophila
28	31	67.4	1976	1 MYHA_BOVIN	Q27991 bos taurus
29	31	67.4	1976	1 MYHA_HUMAN	P35580 homo sapien
30	31	67.4	1976	1 MYHA_RAT	Q9J10 rattus norv
31	30	65.2	80	1 EX7S_BACHD	Q9K968 bacillus ha
32	30	65.2	159	1 MPAA_CORAV	Q08407 corylus ave
33	30	65.2	259	1 DEOC_ECOLI	P00882 escherichia

34	30	65.2	347	1 YF86_MYCPN	P75194 mycoplasma
35	30	65.2	442	1 GAG_VILV	P03352 visna lenti
36	30	65.2	442	1 GAG_VILV1	P23424 visna lenti
37	30	65.2	442	1 GAG_VILV2	P23425 visna lenti
38	30	65.2	442	1 GAG_VILVK	P35935 visna lenti
39	30	65.2	446	1 GAG_OMVVS	P16900 ovine lenti
40	30	65.2	457	1 LAT_STRCL	Q01767 streptomyce
41	30	65.2	464	1 CAPB_BACAN	P19580 bacillus an
42	30	65.2	489	1 OCLN_POTTR	Q26793 potorous tr
43	30	65.2	583	1 HASS_XENLA	O57428 xenopus lae
44	30	65.2	611	1 ACE_HAEIE	Q10715 haematobia
45	30	65.2	686	1 TRFE_ANAPL	P56410 anas platyr

ALIGNMENTS

RESULT 1

ID	BIEA_RAT	STANDARD;	PRT;	295 AA.
AC	P46844;			
DT	01-NOV-1995 (Rel. 32, Created)			
DT	01-NOV-1995 (Rel. 32, Last sequence update)			
DT	15-JUL-1999 (Rel. 38, Last annotation update)			
DE	Biliverdin reductase A precursor (EC 1.3.1.24) (Biliverdin-IX alpha-reductase).			
DE	reductase).			
GN	BLVRA OR BLVR.			
OS	Rattus norvegicus (Rat).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.			
OX	NCBI_TaxID=10116;			
RN	[1]			
RP	SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.			
RC	TISSUE=Kidney;			
RX	MEDLINE=92156147; PubMed=1371282;			
RA	Fakhrai H., Maines M.D.;			
RT	"Expression and characterization of a cDNA for rat kidney biliverdin reductase. Evidence suggesting the liver and kidney enzymes are the same transcript product."			
RT	same transcript product."			
RL	J. Biol. Chem. 267:4023-4029(1992).			
RN	[2]			
RP	MUTAGENESIS.			
RA	MEDLINE=94291657; PubMed=8020496;			
RA	McCoubrey W.K. Jr., Maines M.D.;			
RT	"Site-directed mutagenesis of cysteine residues in biliverdin reductase. Roles in substrate and cofactor binding."			
RL	Eur. J. Biochem. 222:597-603(1994).			
CC	- - FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN; DISPLAYS TWO DISTINCT PH OPTIMA USING A DIFFERENT COFACTOR AT EACH PH: NADH AT THE LOWER PH 6.7-6.9 RANGE AND NADPH AT PH 8.5-8.7. NADPH, HOWEVER, IS THE PROBABLE COFACTOR IN BIOLOGICAL SYSTEMS.			
CC	- - CATALYTIC ACTIVITY: Bilirubin + NAD(P)(+)- = biliverdin + NAD(P)H.			
CC	- - COFACTOR: BINDS ONE ZINC ION.			
CC	- - PATHWAY: FINAL STEP IN HEME METABOLISM.			
CC	- - SUBUNIT: MONOMER (BY SIMILARITY).			
CC	- - SUBCELLULAR LOCATION: Cytoplasmic.			
CC	- - SIMILARITY: TO E.COLI YHHX.			

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DR	EMBL; M81681; AAA40830.1; -			
DR	InterPro: IPR000683; GFO_IDH_MocA.			
DR	Pfam: PF01408; GFO_IDH_MocA; 1.			
KW	Oxidoreductase; NAD; NADP; Zinc.			
FT	PROPEP	1	2	
FT	CHAIN	3	295	BILIVERDIN REDUCTASE A.
FT	DOMAIN	11	16	POLY-VAL.

FT METAL 279 ZINC (POTENTIAL).
FT METAL 280 ZINC (POTENTIAL).
FT METAL 291 ZINC (POTENTIAL).
FT METAL 292 ZINC (POTENTIAL).
FT METAL 293 ZINC (POTENTIAL).
FT MUTAGEN 73 C->A: LOSS OF ACTIVITY.
FT MUTAGEN 280 C->A: REDUCED ACTIVITY.
FT MUTAGEN 291 C->A: REDUCED ACTIVITY.
SQ SEQUENCE 295 AA; 33565 MW; 219C8EA96C150588 CRC64;

Query Match 100.0%; Score 46; DB 1; Length 295;
Best Local Similarity 100.0%; Pred. NO. 0.19;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QKLCHQKK 8
| | | | | | | |
Db 288 QKLCHQKK 295

RESULT 2
CBP1_YEAST STANDARD; PRT; 654 AA.
AC P07252; 1988 (Rel. 07, Created)
DT 01-APR-1988 (Rel. 07, Last sequence update)
DT 01-APR-1988 (Rel. 07, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE Cytochrome B pre-mRNA processing protein 1.
DE CBP1 OR YJL209W OR J0242 OR HRA654.
GN Saccharomyces cerevisiae (Baker's yeast).
OS Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC Saccharomycetales; Saccharomycetaceae; Saccharomycetes.
OX NCBI_TaxID=4932;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=84185566; PubMed=6325407;
RA Dieckmann C.B., Homslon G., Tzagoloff A.;
RT "Assembly of the mitochondrial membrane system. Nucleotide sequence of a yeast nuclear gene (CBP1) involved in 5' end processing of cytochrome b pre-mRNA.";
RL J. Biol. Chem. 259:4732-4738(1984).
RN [2]
RP SEQUENCE FROM N.A.
RX STRAIN=S288C;
MEDLINE=95242842; PubMed=7725802;
RA Vandenbol M., Durand P., Bolle P.-A., Dion C., Portetelle D., Hilger F.;
RT "Sequence analysis of a 40.2 kb DNA fragment located near the left telomere of yeast chromosome X.";
RL Yeast 10:1657-1662(1994).
RN [3]
RP SEQUENCE OF 589-654 FROM N.A.
RX MEDLINE=90014786; PubMed=2552292;
RA Liu Y., Dieckmann C.L.;
RT "Overproduction of yeast viruslike particles by strains deficient in a mitochondrial nuclease.";
RL Mol. Cell. Biol. 9:3323-3331(1989).
RN [4]
RP FUNCTION: RESPONSIBLE FOR CONFERRING A STABLE 5' END ON CYTOCHROME B MRNA.

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CC -----
DR EMBL: K02647; AAA34474.1; -
DR EMBL: Z34098; CAA84002.1; -
DR EMBL: Z49484; CAA89506.1; -
DR EMBL: M28067; AAA34456.1; -
DR PIR: S05829; BVDIPI.
DR PIR: S45164; S45164.
DR SGD: S0003745; CBP1.

KW mRNA processing.
SQ SEQUENCE 654 AA; 76171 MW; 2453B03280E1C44D CRC64;
Query Match 78.3%; Score 36; DB 1; Length 654;
Best Local Similarity 75.0%; Pred. NO. 23;
Matches 6; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
Qy 1 QKLCHQKK 8
| | | | | | | |
Db 514 KKLCHYKK 521

RESULT 3

Z145_HUMAN STANDARD; PRT; 673 AA.
AC Q05516; 1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Zinc finger protein PLZF (Promyelocytic leukemia zinc finger protein) (Zinc finger protein 145).
DE ZNF145 OR PLZF.
GN ZNF145 OR PLZF.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=Heart ventricle;
MEDLINE=93209216; PubMed=8384553;
RA Chen Z., Brand N.J., Chen A., Chen S.-J., Tong J.-H., Wang Z.-Y., Waxman S., Zelent A.;
RT "Fusion between a novel Kruppel-like zinc finger gene and the retinoic acid receptor-alpha locus due to a variant t(11;17) translocation associated with acute promyelocytic leukaemia.";
RL EMBO J. 12:1161-1167(1993).
RN [2]
RP SEQUENCE OF 424-455 FROM N.A.
RX MEDLINE=93253074; PubMed=8387545;
RA Chen S.-J., Zelent A., Tong J.-H., Yu H.-Q., Wang Z.-Y., Derre J., Berger R., Waxman S., Chen Z.;
RT "Rearrangements of the retinoic acid receptor alpha and promyelocytic leukemia zinc finger genes resulting from t(11;17)(q23;q21) in a patient with acute promyelocytic leukemia.";
RL J. Clin. Invest. 91:2260-2267(1993).
RN [3]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS) OF 7-122.
RX MEDLINE=20005701; PubMed=10537309;
RA Li X., Peng H., Schultz D.C., Lopez-Guisa J.M., Rauscher F.J. III, Marmorstein R.;
RT "Structure-function studies of the BTB/POZ transcriptional repression domain from the promyelocytic leukemia zinc finger oncoprotein.";
RL Cancer Res. 59:5275-5282(1999).
CC -1- FUNCTION: PROBABLE TRANSCRIPTION FACTOR. MAY PLAY A ROLE IN MYELOID MATURATION AND IN THE DEVELOPMENT AND/OR MAINTENANCE OF OTHER DIFFERENTIATED TISSUES.
CC -1- SUBCELLULAR LOCATION: Nuclear.
CC -1- ALTERNATIVE PRODUCTS: 2 ISOFORMS; PLZF AND PLZF2 (SHOWN HERE);
CC -1- TISSUE SPECIFICITY: WITHIN THE HEMATOPOIETIC SYSTEM, PLZF IS EXPRESSED IN BONE MARROW, EARLY MYELOID CELL LINES AND PERIPHERAL BLOOD MONONUCLEAR CELLS. ALSO EXPRESSED IN THE OVARY, AND AT LOWER LEVELS, IN THE KIDNEY AND LUNG.
CC -1- INDUCTION: BY RETINOIC ACID.
CC -1- DISEASE: A FORM OF ACUTE PROMYELOCYTIC LEUKEMIA (APL) IS CHARACTERIZED BY A CHROMOSOMAL TRANSLOCATION T(11;17)(Q32;Q21) WHICH INVOLVES ZNF145 AND RETINOIC ACID RECEPTOR ALPHA (RARA).
CC -1- SIMILARITY: BELONGS TO THE KRUEPPEL FAMILY OF C2H2-TYPE ZINC-FINGER PROTEINS.
CC -1- SIMILARITY: CONTAINS 1 BTB/POZ DOMAIN.
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RESULT 6
3DHQ_ACICA          STANDARD;          PRT;    272 AA.
ID 3DHQ_ACICA
AC Q9087;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Catabolic 3-dehydroquininate dehydratase (EC 4.2.1.10) (3-
DE dehydroquinase).
GN QIIB.
OS Acinetobacter calcoaceticus.
OC Bacteria; Proteobacteria; gamma subdivision; Moraxellaceae;
OC Acinetobacter.
OX NCBI_TaxID=471;
RN [1]
RP SEQUENCE FROM N.A., AND CHARACTERIZATION.
RC STRAIN=BD413 / ADP1;
RX MEDLINE=96011389; PubMed=7592351;
RA Elsmore D.A., Ornstom L.N.;
RT "Unusual ancestry of dehydratases associated with quinate catabolism
RT in Acinetobacter calcoaceticus";
RL J. Bacteriol. 177:5971-5978(1995).
CC -1- FUNCTION: CATALYZES THE CATABOLIC DEHYDRATATION OF DEHYDROQUINATE
CC TO DEHYDROSHIKIMATE.
CC -1- CATALYTIC ACTIVITY: 3-dehydroquininate = 3-dehydroshikimate + H(2)O.
CC -1- PATHWAY: QUINIC ACID CATABOLIC PATHWAY; SECOND STEP. THIS PATHWAY
CC ALLOWS GROWTH OF BACTERIA WITH QUINATE BY ITS CONVERSION TO
CC PROTOCATECHUATE AND SUBSEQUENT METABOLISM BY THE BETA-KETOADIPATE
CC PATHWAY.
CC -1- INDUCTION: BY PROTOCATECHUATE.
CC -1- SIMILARITY: BELONGS TO THE TYPE-I 3-DEHYDROQUINASE FAMILY.
CC -----
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CC -----
CC EMBL; L05770; AAC37158.1; ALT_INIT.
CC InterPro; IPR001381; DHQuinase_I.
CC Pfam; PF01487; DHQuinase_I; 1.
CC PROSITE; PS01028; DEHYDROQUINASE_I; 1.
CC Quinate metabolism; Lyase.
CC ACT_SITE 163 163 BY SIMILARITY.
CC ACT_SITE 190 190 FORMS A SCHIFF-BASE INTERMEDIATE
CC (BY SIMILARITY).
CC -----
CC SEQUENCE 272 AA; 29899 MW; 98646DC5E88BF6D3 CRC64;
Query Match 69.6%; Score 32; DB 1; Length 272;
Best Local Similarity 85.7%; Pred. No. 55;
Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 2 KLCHQKK 8
Db 149 KLAHQKK 155
|||
|||

RESULT 7
DAPF_CLOPE          STANDARD;          PRT;    272 AA.
ID DAPF_CLOPE
AC Q46185;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-MAR-2002 (Rel. 41, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Diaminopimelate epimerase (EC 5.1.1.7) (DAP epimerase).
GN DAPF OR CPE1846.
OS Clostridium perfringens.
OC Bacteria; Firmicutes; Bacillus/Clostridium group; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1502;
RN [1]
RP SEQUENCE FROM N.A.
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RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=13 / Type A;
RX PubMed=11792842;
RA Shimizu T., Ohtani K., Hirakawa H., Ohshima K., Yamashita A.,
RA Shiba T., Ogasawara N., Hattori M., Kuhara S., Hayashi H.;
RT "Complete genome sequence of Clostridium perfringens, an anaerobic
RT flesh-eater.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:996-1001(2002).
RN [2]
RP SEQUENCE OF 168-238 FROM N.A.
RC STRAIN=CPN50;
RX PubMed=7559358;
RA Katayama S.-I., Dupuy B., Garnier T., Cole S.T.;
RT "Rapid expansion of the physical and genetic map of the chromosome of
RT Clostridium perfringens CPN50.";
RL J. Bacteriol. 177:5680-5685(1995).
CC -1- CATALYTIC ACTIVITY: LL-2,6-diaminoheptanedioate = meso-
CC diaminoheptanedioate.
CC -1- PATHWAY: SIXTH STEP IN THE BIOSYNTHESIS OF LYSINE FROM ASPARTATE
CC SEMIALDEHYDE.
CC -1- SUBCELLULAR LOCATION: Cytoplasmic (By similarity).
CC -1- SIMILARITY: BELONGS TO THE DIAMINOPIMELATE EPIMERASE FAMILY.
CC -1- CAUTION: Ref.2 sequence differs from that shown due to a
CC frameshift in position 181.
CC -----
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CC -----
CC EMBL; AF003192; BAB81552.1; -.
CC EMBL; X86511; CAA60229.1; ALT_FRAME.
CC HSP; P44859; 1BW2.
CC InterPro; IPR001653; DAP_Epimerase.
CC PROSITE; PS01326; DAP_EPIMERASE; 1.
CC Isomerase; Lysine biosynthesis; Complete proteome.
CC ACT_SITE 72 72 BY SIMILARITY.
CC ACT_SITE 217 217 BY SIMILARITY.
CC CONFLICT 183 183 E -> D (IN REF. 2).
CC CONFLICT 193 193 F -> S (IN REF. 2).
CC CONFLICT 201 201 T -> P (IN REF. 2).
CC CONFLICT 206 206 T -> P (IN REF. 2).
CC CONFLICT 230 230 K -> N (IN REF. 2).
CC SEQUENCE 272 AA; 30084 MW; 60DB1A8527815C05 CRC64;
Query Match 69.6%; Score 32; DB 1; Length 272;
Best Local Similarity 57.1%; Pred. No. 55;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;
QY 1 OKLCHQK 7
Db 32 QKMCHRR 38
|||
|||

RESULT 8
TF2B_YEAST          STANDARD;          PRT;    345 AA.
ID TF2B_YEAST
AC P29055;
DT 01-DEC-1992 (Rel. 24, Created)
DT 01-DEC-1992 (Rel. 24, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE Transcription initiation factor IIB (TFIIB) (Transcription factor E).
GN SUA7 OR YPR086W OR P9513.4.
OS Saccharomyces cerevisiae (Baker's yeast).
OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC Saccharomycetales; Saccharomycetaceae; Saccharomyces.
OX NCBI_TaxID=4932;
RN [1]
RP SEQUENCE FROM N.A.
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RX MEDLINE=92191276; PubMed=1547497;
RA Pinto I., Ware D.E., Hampsey M.;
RT "The yeast SUA7 gene encodes a homolog of human transcription factor
RT TFIIB and is required for normal start site selection in vivo.";
RL Cell 68:977-988(1992).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=S288C / AB972;
RA Johnston M., Andrews S., Brinkman R., Cooper J., Ding H., Du Z.,
RA Favella A., Fulton L., Gattung S., Greco T., Kirsten J.,
RA Kucaba T., Hallsworth K., Hawkins J., Hillier L., Jier M.,
RA Johnson D., Johnston L., Langston Y., Latreille P., Le T.,
RA Mardis E., Menezes S., Miller N., Nhan M., Pauley A., Peluso D.,
RA Rifkin L., Riles L., Taich A., Trevaskis E., Vignati D.,
RA Wilcox L., Wohldman P., Vaudin M., Wilson R., Waterston R.;
RL Submitted (MAR-1996) to the EMBL/GenBank/DBJ databases.
CC
CC -1- FUNCTION: GENERAL FACTOR THAT PLAYS A MAJOR ROLE IN THE ACTIVATION
CC OF EUKARYOTIC GENES TRANSCRIBED BY RNA POLYMERASE II.
CC -1- SUBUNIT: ASSOCIATES WITH TFIID-III (DA COMPLEX) TO FORM TFIID-
CC IIIA-III (DAB-COMPLEX) WHICH IS THEN RECOGNIZED BY POLYMERASE II.
CC -1- SUBCELLULAR LOCATION: Nuclear.
CC -1- SIMILARITY: BELONGS TO THE TFIIB FAMILY.
CC
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CC
CC EMBL: M81380; AAA35126.1; -
CC DR EMBL: U51033; AAB68135.1; -
CC DR EMBL: S26707; S26707.
CC DR HSP: Q00403; IDL6.
CC DR TRANSFAC: T00819; -
CC DR SGD: S0006290; SUA7.
CC DR InterPro: IPR000553; Cyclin.
CC DR InterPro: IPR000812; TFIIB.
CC DR Pfam: PF00382; transcript_fac2; 2.
CC DR PRINTS: PR00685; TIFACTORIIIB.
CC DR SMART: SM00385; CYCLIN; 2.
CC DR PROSITE: PS00782; TFIIB; 1.
CC DR Transcription regulation; Nuclear protein; Repeat; Zinc-finger.
CC KW
CC ZN_FING 24 48
CC REPEAT 136 212
CC REPEAT 242 318
CC FT REPEAT
CC FT REPEAT
CC SQ SEQUENCE 345 AA; 38200 MW; 8F1F6D24602436E2 CRC64;
Query Match 69.6%; Score 32; DB 1; Length 345;
Best Local Similarity 71.4%; Pred. No. 67;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 2 KLCHQKK 8
DB 155 KLCHDEK 161
|||||:|
RESULT 9
Y303_MYCGE
ID Y303_MYCGE STANDARD; PRT; 357 AA.
AC P47545;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Hypothetical ABC transporter ATP-binding protein MG303.
GN MG303.
OS Mycoplasma genitalium.
OC Bacteria; Firmicutes; Bacillus/Clostridium group; Mollicutes;
OC Mycoplasmataceae; Mycoplasma.
OX NCBI_TaxID=2097;
RN [1]
RP SEQUENCE FROM N.A.
-----
RX MEDLINE=92191276; PubMed=1547497;
RA Fraser C.M., Gocayne J.D., White O., Adams M.D., Clayton R.A.,
RA Fritchman R.D., Bult C.J., Kerlavage A.R., Sutton G., Kelley J.M.,
RA Fritchman J.L., Weidman J.F., Small K.V., Sandusky M., Fuhrmann J.L.,
RA Nguyen D.T., Utterback T.R., Saudek D.M., Phillips C.A., Merrick J.M.,
RA Tomb J.-F., Dougherty B.A., Boff K.F., Hu P.-C., Lucier T.S.,
RA Peterson S.N., Smith H.O., Hutchison C.A. III, Venter J.C.;
RL "The minimal gene complement of Mycoplasma genitalium.";
RL Science 270:397-403(1995).
CC -1- SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY.
CC
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CC
CC EMBL: U39710; AAC71525.1; -
CC DR TIGR: MG303; -
CC DR InterPro: IPR003593; AAA.
CC DR InterPro: IPR003439; ABC_transporter.
CC DR InterPro: IPR001687; ATP_GTP_A.
CC DR Pfam: PF00005; ABC_tran; 1.
CC DR SMART: SM00382; AAA; 1.
CC DR PROSITE: PS00211; ABC_TRANSPORTER; FALSE_NEG.
CC KW Hypothetical protein; ATP-binding; Transport; Complete proteome.
CC FT NP_BIND 107 114
CC FT ATP (POTENTIAL).
CC SQ SEQUENCE 357 AA; 40786 MW; AFB1012F886E090E CRC64;
Query Match 69.6%; Score 32; DB 1; Length 357;
Best Local Similarity 83.3%; Pred. No. 69;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
QY 2 KLCHQK 7
DB 183 KLCHKK 188
|||||:|
RESULT 10
PRIM_CHLTR
ID PRIM_CHLTR STANDARD; PRT; 595 AA.
AC O84739;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE DNA primase (EC 2.7.7.-).
GN DNAG OR CT794.
OS Chlamydia trachomatis.
OC Bacteria; Chlamydiales; Chlamydiaceae; Chlamydia.
OX NCBI_TaxID=813;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=D/UW-3/CX;
RX MEDLINE=99000809; PubMed=9784136;
RA Stephens R.S., Kalman S., Lammel C.J., Fan J., Marathe R., Aravind L.,
RA Mitchell W.P., Olinger L., Tatusov R.L., Zhao Q., Koonin E.V.,
RA Davis R.W.;
RL "Genome sequence of an obligate intracellular pathogen of humans:
RL Chlamydia trachomatis.";
RL Science 282:754-759(1998).
CC -1- FUNCTION: DNA PRIMASE IS THE POLYMERASE THAT SYNTHESIZES SMALL
CC RNA PRIMERS FOR THE OKAZAKI FRAGMENTS ON BOTH TEMPLATE STRANDS AT
CC REPLICATION FORKS DURING CHROMOSOMAL DNA SYNTHESIS.
CC -1- COFACTOR: BINDS ONE ZINC ION PER MOLECULE (BY SIMILARITY).
CC -1- SUBUNIT: MONOMER (BY SIMILARITY).
CC
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DR EMBL; AE001351; AAC68389.1; -
 DR HSP; Q9X4D0; ID0Q.
 DR InterPro; IPR002936; Toprim.
 DR InterPro; IPR002694; ZnF_CHCC.
 DR Pfam; PF01751; Toprim; 1.
 DR Pfam; PF01807; zf-CHC2; 1.
 DR ProDom; PD002988; ZnF_CHCC; 1.
 DR SMART; SM00493; TOPRIN; 1.
 DR SMART; SM00400; ZnF_CHCC; 1.
 KW Transferase; DNA replication; DNA-directed RNA polymerase; Primosome;
 KW Zinc-finger; Zinc; Metal-binding; Complete proteome.
 FT ZN_FING 38 62 CHC2-TYPE (BY SIMILARITY).
 SQ SEQUENCE 595 AA; 68037 MW; 536858EBAFCDF8FB6 CRC64;

Query Match 69.6%; Score 32; DB 1; Length 595;
 Best Local Similarity 83.3%; Pred. No. 1.1e+02;
 Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCQ 6
 :|||||
 Db 565 RKLCQ 570

RESULT 11
 FETA_GORGO STANDARD; PRT; 609 AA.
 AC P28050;
 DT 01-AUG-1992 (Rel. 23, Created)
 DT 01-AUG-1992 (Rel. 23, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Alpha-fetoprotein precursor (Alpha-fetoglobulin) (Alpha-1-fetoprotein).
 GN AFP.
 OS Gorilla gorilla gorilla (Lowland gorilla).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Gorilla.
 OX NCBI_TaxID=9595;
 [1]
 RN SEQUENCE FROM N.A.
 RP MEDLINE=91169517; PubMed=1706310;
 RA Ryan S.C., Zielinski R., Dugaiczky A.;
 RT "Structure of the gorilla alpha-fetoprotein gene and the divergence of primates";
 RL Genomics 9:60-72(1991).
 CC -1- FUNCTION: BINDS COPPER, NICKEL, AND FATTY ACIDS AS WELL AS, AND BILIRUBIN LESS WELL THAN, SERUM ALBUMIN.
 CC -1- SUBUNIT: DIMERIC AND TRIMERIC FORMS HAVE BEEN FOUND IN ADDITION TO THE MONOMERIC FORM (BY SIMILARITY).
 CC -1- SUBCELLULAR LOCATION: Extracellular.
 CC -1- TISSUE SPECIFICITY: PLASMA.
 CC -1- DOMAIN: COMPOSED OF THREE HOMOLOGOUS DOMAINS.
 CC -1- PTM: SULFATED (BY SIMILARITY).
 CC -1- SIMILARITY: BELONGS TO THE ALB/AFP/VDB FAMILY.
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DR EMBL; M38272; AAA73520.1; -
 DR PIR; A37970; FPGO.
 DR HSP; P02768; 1BJ5.
 DR InterPro; IPR000264; Serum_albumin.
 DR Pfam; PF00273; transport_prot; 3.
 DR PRINTS; PR00802; SERUMALBUMIN.
 DR ProDom; PD002486; Serum_albumin; 1.

DR SMART; SM00103; ALBUMIN; 3.
 KW PROSITE; PS00212; ALBUMIN; 2.
 DR Glycoprotein; Sulfation; Albumin; Plasma; Embryo; Repeat;
 KW Metal-binding; Copper; Nickel; Signal
 FT SIGNAL 1 18 BY SIMILARITY.
 FT CHAIN 19 609 ALPHA-FETOPROTEIN.
 FT METAL 22 22 COPPER AND NICKEL (BY SIMILARITY).
 FT DISULFID 99 114 BY SIMILARITY.
 FT DISULFID 113 124 BY SIMILARITY.
 FT DISULFID 148 193 BY SIMILARITY.
 FT DISULFID 192 201 BY SIMILARITY.
 FT DISULFID 224 270 BY SIMILARITY.
 FT DISULFID 269 277 BY SIMILARITY.
 FT DISULFID 289 303 BY SIMILARITY.
 FT DISULFID 302 313 BY SIMILARITY.
 FT DISULFID 384 393 BY SIMILARITY.
 FT DISULFID 416 462 BY SIMILARITY.
 FT DISULFID 461 472 BY SIMILARITY.
 FT DISULFID 485 501 BY SIMILARITY.
 FT DISULFID 500 511 BY SIMILARITY.
 FT DISULFID 538 583 BY SIMILARITY.
 FT DISULFID 582 591 BY SIMILARITY.
 FT CARBOHYD 251 251 N-LINKED (GLCNAC...) (POTENTIAL).
 SQ SEQUENCE 609 AA; 68697 MW; E8AE548377DB60EB CRC64;

Query Match 69.6%; Score 32; DB 1; Length 609;
 Best Local Similarity 50.0%; Pred. No. 1.1e+02;
 Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCQKK 8
 :|||||:
 Db 96 EELCHEKE 103

RESULT 12
 FETA_HUMAN STANDARD; PRT; 609 AA.
 ID FETA_HUMAN
 AC P02771;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 21-JUL-1986 (Rel. 01, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Alpha-fetoprotein precursor (Alpha-fetoglobulin) (Alpha-1-fetoprotein).
 GN AFP.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
 OX NCBI_TaxID=9606;
 [1]
 RN SEQUENCE FROM N.A.
 RP MEDLINE=83273654; PubMed=6192439;
 RA Morinaga T., Sakai M., Wegmann T.G., Tamaoki T.;
 RT "Primary structures of human alpha-fetoprotein and its mRNA";
 RL Proc. Natl. Acad. Sci. U.S.A. 80:4604-4608(1983).
 [2]
 RN SEQUENCE FROM N.A.
 RP MEDLINE=87185438; PubMed=2436661;
 RA Gibbs P.E.M., Zielinski R., Boyd C., Dugaiczky A.;
 RT "Structure, polymorphism, and novel repeated DNA elements revealed by a complete sequence of the human alpha-fetoprotein gene";
 RL Biochemistry 26:1332-1343(1987).
 [3]
 RN SEQUENCE OF 1-28 FROM N.A.
 RP MEDLINE=93278385; PubMed=7684942;
 RA McVey J.H., Michaelides K., Hansen L.P., Ferguson-Smith M.,
 RA Tilghman S., Krumlauf R., Tuddenham E.G.D.;
 RT "A G->A substitution in an HNF I binding site in the human alpha-fetoprotein gene is associated with hereditary persistence of alpha-fetoprotein (HPAFP).";
 RL Hum. Mol. Genet. 2:379-379(1993).
 [4]
 RN SEQUENCE OF 429-556 FROM N.A.
 RP MEDLINE=83158778; PubMed=6187626;


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ID Y081_CAEEL STANDARD; PRT; 645 AA.
AC P34617;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1995 (Rel. 31, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Hypothetical GTP-binding protein ZK1236.1 in chromosome III.
GN ZK1236.1.
OS Caenorhabditis elegans.
OC Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditidae;
OC Rhabditidae; Peloderinae; Caenorhabditis.
OX NCBI_TaxID=6239;
RN [1]
RP SEQUENCE FROM N.A.
RX STRAIN=BRISTOL N2;
RX MEDLINE=94150718; PubMed=7906398;
RA Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
RA Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.,
RA Craxton M., Dear S., Du Z., Durlin R., Favell A., Fraser A.,
RA Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M.,
RA Johnston L., Jones M., Kershaw J., Kirsten J., Laister N.,
RA Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.,
RA Parsons J., Percy C., Rifkin L., Roopra A., Saunders D., Showkeen R.,
RA Sims M., Smaldon N., Smith A., Smith M., Sonhammer E., Staden R.,
RA Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
RA Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
RA Wohldman P.;
RA "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
RT elegans.";
RL Nature 368:32-38(1994).
CC -1- SIMILARITY: BELONGS TO THE GTP-BINDING ELONGATION FACTOR FAMILY.
CC LEPA SUBFAMILY.
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CC EMBL; L13200; AAA28191.2; -
CC HSSP; P13551; 1ELO.
CC WormPep; ZK1236.1; CE01446.
CC InterPro; IPR000795; GTP_EFTU.
CC Pfam; PF004161; GTP_EFTU_D2.
CC Pfam; PF00009; GTP_EFTU; 1.
CC Pfam; PF03144; GTP_EFTU_D2; 1.
CC PROSITE; PS00301; EFATOR_GTP; 1.
KW Hypothetical protein; GTP-binding.
FT NP_BIND 49 56 GTP (POTENTIAL).
FT NP_BIND 108 112 GTP (POTENTIAL).
FT NP_BIND 162 165 GTP (POTENTIAL).
SQ SEQUENCE 645 AA; 72268 MW; 3F08EA3E5FD53819 CRC64;
Query Match 59.6%; Score 32; DB 1; Length 645;
Best Local Similarity 75.0%; Pred. No. 1.2e+02;
Matches 6; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 QKLCQKK 8
Db 614 KKLSHQKK 621
RESULT 14
SYL_MYCGE STANDARD; PRT; 895 AA.
ID SYL_MYCGE
AC P47587;
DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Isoleucyl-tRNA synthetase (EC 6.1.1.5) (Isoleucine--tRNA ligase)
DE (ILERS).
GN ILES OR MG345.
-----
OS Mycoplasma genitalium.
OC Bacteria; Firmicutes; Bacillus/Clostridium group; Mollicutes;
OC Mycoplasmataceae; Mycoplasma.
OX NCBI_TaxID=2097;
RN [1]
RP SEQUENCE FROM N.A.
RX STRAIN=ATCC 33530 / G-37;
RX MEDLINE=96026346; PubMed=7569993;
RA Fraser C.M., Gocayne J.D., White O., Adams M.D., Clayton R.A.,
RA Fleischman J.L., Feldman J.F., Small K.V., Sandusky M., Sutter G., Kelley J.M.,
RA Fritchman D.T., Uterback T.R., Saudek D.M., Phillips C.A., Merrick J.M.,
RA Tomb J.F., Dougherty B.A., Bott K.F., Hu P.-C., Lucier T.S.,
RA Peterson S.N., Smith H.O., Hutchison C.A. III, Venter J.C.;
RT "The minimal gene complement of Mycoplasma genitalium.";
RL Science 270:397-403(1995).
RN [2]
RP SEQUENCE OF 262-371 AND 605-711 FROM N.A.
RX STRAIN=ATCC 33530 / G-37;
RX MEDLINE=94075230; PubMed=8253680;
RA Peterson S.N., Hu P.-C., Bott K.F., Hutchison C.A. III;
RT "A survey of the Mycoplasma genitalium genome by using random
RT sequencing.";
RL J. Bacteriol. 175:7918-7930(1993).
CC -1- CATALYTIC ACTIVITY: ATP + L-isoleucine + tRNA(Ile) = AMP +
CC diphosphate + L-isoleucyl-tRNA(Ile).
CC -1- COFACTOR: BINDS 1 ZINC ION (BY SIMILARITY).
CC -1- SUBUNIT: MONOMER (BY SIMILARITY).
CC -1- SUBCELLULAR LOCATION: Cytoplasmic.
CC -1- SIMILARITY: BELONGS TO CLASS-I AMINOACYL-TRNA SYNTHETASE FAMILY.
-----
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-----
CC EMBL; U39716; AAC71570.1; -
CC EMBL; U02196; AAD12482.1; -
CC EMBL; U02254; AAD12519.1; -
CC HSSP; P41972; 1FFY.
CC TIGR; MG345; -
CC InterPro; IPR002300; tRNA-synt_1a.
CC InterPro; IPR001412; tRNA-synt_1.
CC InterPro; IPR002301; tRNA-synt_ile.
CC Pfam; PF00133; tRNA-synt_1; 1.
CC PRINTS; PR00984; TRNASYNTHILE.
CC PROSITE; PS00178; AA-TRNA_LIGASE_I; 1.
KW Aminoacyl-tRNA synthetase; Protein biosynthesis; Ligase; ATP-binding;
KW Metal-binding; Zinc; Complete proteome.
FT SITE 57 67 "HIGH" REGION.
FT SITE 590 594 "KMSKS" REGION.
FT BINDING 593 593 ATP (BY SIMILARITY).
SQ SEQUENCE 895 AA; 104395 MW; 8C78DE6A05311B22 CRC64;
Query Match 69.6%; Score 32; DB 1; Length 895;
Best Local Similarity 83.3%; Pred. No. 1.6e+02;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
QY 1 QKLCQK 6
Db 122 RKLCHQ 127
RESULT 15
AT12_HUMAN STANDARD; PRT; 1593 AA.
ID AT12_HUMAN
AC P58397;
DT 01-MAR-2002 (Rel. 41, Created)
DT 01-MAR-2002 (Rel. 41, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
GN ILES OR MG345.
```

DE ADAMTS-12 precursor (EC 3.4.24.-) (A disintegrin and
DE metalloproteinase with thrombospondin motifs 12) (ADAM-TS 12) (ADAM-
DE TS12).
GN ADAMTS12.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=fetal lung;
RX MEDLINE=21264577; PubMed=11279086;
RA Cal S., Argueelles J.M., Fernandez P.L., Lopez-Otin C.;
RT "Identification, characterization, and intracellular processing of
RT ADAM-TS12, a novel human disintegrin with a complex structural
RT organization involving multiple thrombospondin-1 repeats.";
RL J. Biol. Chem. 276:17932-17940(2001).
CC -1- COFACTOR: BINDS 1 ZINC ION (BY SIMILARITY).
CC -1- SUBCELLULAR LOCATION: SECRETED. ASSOCIATED WITH THE EXTRACELLULAR
CC MATRIX (BY SIMILARITY).
CC -1- TISSUE SPECIFICITY: Expressed exclusively in fetal lung. Is widely
CC expressed in gastric carcinomas and in cancer cells of diverse
CC origin.
CC -1- DOMAIN: THE SPACER DOMAIN AND THE TSP TYPE 1 DOMAINS ARE IMPORTANT
CC FOR A TIGHT INTERACTION WITH THE EXTRACELLULAR MATRIX (BY
CC SIMILARITY).
CC -1- PTM: THE PRECURSOR IS CLEAVED BY A URIN ENDOPEPTIDASE.
CC -1- PTM: IS SUBJECTED TO AN INTRACELLULAR MATURATION PROCESS LEADING
CC TO A FRAGMENT CONTAINING THE N-TERMINAL REGION INCLUDING THE
CC METALLOPROTEINASE, DISINTEGRIN-LIKE, CYS-RICH AND TS-1 DOMAINS AND
CC THE C-TERMINAL FRAGMENT CONTAINING THE SPACER 2 AND THE FOUR TS-1
CC DOMAINS.
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY M12B.
CC -1- SIMILARITY: CONTAINS 1 DISINTEGRIN-LIKE DOMAIN.
CC -1- SIMILARITY: CONTAINS 8 TSP TYPE-1 DOMAINS.
CC -----
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CC -----
DR EMBL: AJ250725; CAC20419.1; .
DR MIM: 606184; .
DR PROSITE: PS0215; ADAM_MEPPO; 1.
DR PROSITE: PS00427; DISINTEGRIN_1; FALSE_NEG.
DR PROSITE: PS50092; TS1; 2.
DR PROSITE: PS00142; ZINC_PROTEASE; 1.
KW Hydrolase; Metalloprotease; Zinc; Signal; Glycoprotein; Zymogen;
KW Repeat; Extracellular matrix.
FT SIGNAL 1 25 POTENTIAL.
FT PROPEP 26 240 BY SIMILARITY.
FT CHAIN 241 1593 ADAMTS-12.
FT DOMAIN 465 544 DISINTEGRIN-LIKE.
FT DOMAIN 545 596 TSP TYPE-1 1.
FT DOMAIN 597 700 CYS-RICH.
FT DOMAIN 701 826 SPACER 1.
FT DOMAIN 827 881 TSP TYPE-1 2.
FT DOMAIN 886 943 TSP TYPE-1 3.
FT DOMAIN 947 995 TSP TYPE-1 4.
FT DOMAIN 996 1315 SPACER 2.
FT DOMAIN 1316 1364 TSP TYPE-1 5.
FT DOMAIN 1367 1423 TSP TYPE-1 6.
FT DOMAIN 1426 1471 TSP TYPE-1 7.
FT DOMAIN 1426 1471 TSP TYPE-1 8.
FT DOMAIN 302 305 POLY-GLU.
FT SITE 208 208 CYSTEINE SWITCH (POTENTIAL).
FT METAL 392 392 ZINC (CATALYTIC) (BY SIMILARITY).
FT ACT_SITE 393 393 BY SIMILARITY.
FT METAL 396 396 ZINC (CATALYTIC) (BY SIMILARITY).
FT METAL 402 402 ZINC (CATALYTIC) (BY SIMILARITY).

FT	CARBOHYD	105	105	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	125	125	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	215	215	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	485	485	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	685	685	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	790	790	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	951	951	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	1104	1104	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	1275	1275	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	1300	1300	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	1320	1320	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	1371	1371	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	1378	1378	N-LINKED (GLCNAC. . .)	(POTENTIAL).
FT	CARBOHYD	1503	1503	N-LINKED (GLCNAC. . .)	(POTENTIAL).
SQ	SEQUENCE	1593 AA;	177545 MW;	079F48E63BD83A3	CRG64;

Query Match 69.6%; Score 32; DB 1; Length 1593;
Best Local Similarity 71.4%; Pred. No. 2.6e+02;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHQK 7
Db 873 QKKCHEK 879

Search completed: November 1, 2002, 14:47:48
Job time : 2.41158 secs

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:58 ; Search time 0.848875 Seconds
(without alignments)
905.569 Million cell updates/sec

Title: us-09-606-129a-19
Perfect score: 46
Sequence: 1 QKLCQKK 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_71.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	46	100.0	295	2 A42268	biliverdin reducta
2	36	78.3	654	1 BV8YPI	CBPI protein - yea
3	34	73.9	208	2 E89046	protein Cl08.2 [1
4	34	73.9	547	2 T39478	zinc-finger protei
5	34	73.9	1188	2 A71621	protein with 5'-3'
6	34	73.9	1295	2 T30528	reverse transcript
7	34	73.9	1473	2 T31422	C-terminal domain-
8	33	71.7	263	2 E72675	hypothetical prote
9	33	71.7	487	2 AF3147	glutamate-1-semial
10	33	71.7	476	2 D98140	hypothetical prote
11	33	71.7	673	2 S36336	probable transcrip
12	33	71.7	773	2 T00554	hypothetical prote
13	33	71.7	1247	2 T18671	hypothetical prote
14	32	69.6	135	1 W6WLEP	E6 protein - Europ
15	32	69.6	210	2 T16125	hypothetical prote
16	32	69.6	221	2 D90195	hypothetical prote
17	32	69.6	290	2 I39522	3-dehydroquinat d
18	32	69.6	345	1 S26707	transcription init
19	32	69.6	357	2 E64233	membrane transport
20	32	69.6	380	2 T24081	hypothetical prote
21	32	69.6	422	2 E96753	hypothetical prote
22	32	69.6	462	2 A46170	tektin A1 - sea ur
23	32	69.6	465	2 T27032	hypothetical prote
24	32	69.6	474	2 T00699	hypothetical prote
25	32	69.6	548	2 T22137	hypothetical prote
26	32	69.6	581	2 S44896	zK1236.1 protein -
27	32	69.6	595	2 F71471	probable DNA prima
28	32	69.6	609	1 FPHU	alpha-fetoprotein
29	32	69.6	609	1 FPGO	alpha-fetoprotein

30 32 69.6 895 2 B64238
31 32 69.6 920 2 JC7313
32 32 69.6 1056 2 T00060
33 31 67.4 54 2 H69960
34 31 67.4 170 1 UNDG
35 31 67.4 251 2 G86368
36 31 67.4 266 2 T33411
37 31 67.4 271 2 T16421
38 31 67.4 299 2 A75401
39 31 67.4 324 2 G97141
40 31 67.4 343 2 AB1243
41 31 67.4 343 2 AF1605
42 31 67.4 364 2 T03892
43 31 67.4 436 2 D84782
44 31 67.4 478 2 C71523
45 31 67.4 491 2 G83850

ALIGNMENTS

RESULT 1

A42268
biliverdin reductase (EC 1.3.1.24) - rat
C:Species: Rattus norvegicus (Norway rat)
C:Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C:Accession: A42268
R:Fakhrai, H.; Maines, M.D.
J. Biol. Chem. 267, 4023-4029, 1992
A:Title: Expression and characterization of a cDNA for rat kidney biliverdin reductas
A:Reference number: A42268; MUID:92156147
A:Accession: A42268
A:Status: preliminary; not compared with conceptual translation
A:Molecule type: nucleic acid; protein
A:Residues: 1-295 <FAK>
A:Cross-references: GB:M81681; NID:g203177; PIDN:AAA40830.1; PID:g203178
A:Experimental source: kidney
A:Note: sequence extracted from NCBI backbone (NCBIP:82800)
C:Keywords: liver; oxidoreductase

Query Match 100.0%; Score 46; DB 2; Length 295;
Best Local Similarity 100.0%; Pred. No. 0.51;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCQKK 8
DB 288 QKLCQKK 295

RESULT 2

BV8YPI
CBPI protein - yeast (Saccharomyces cerevisiae)
N:Alternate names: protein HRA654; protein J0242; protein YJL209w
C:Species: Saccharomyces cerevisiae
C:Date: 31-Mar-1991 #sequence_revision 31-Mar-1991 #text_change 12-Nov-1999
C:Accession: S05829; S50776; S56999; S45164
R:Dieckmann, C.L.; Homison, G.; Tzagoloff, A.
J. Biol. Chem. 259, 4732-4738, 1984
A:Title: Assembly of the mitochondrial membrane system. Nucleotide sequence of a yeast
A:Reference number: S05829; MUID:84185566
A:Accession: S05829
A:Molecule type: DNA
A:Residues: 1-654 <DE>
A:Cross-references: EMBL:K02647; NID:g171166; PIDN:AAA34474.1; PID:g171167
R:Vandenbol, M.; Durand, P.; Bolle, P.A.; Dion, C.; Portetelle, D.; Hilger, F.
Yeast 10, 1657-1662, 1994
A:Title: Sequence analysis of a 40.2 kb DNA fragment located near the left telomere o
A:Reference number: S50701; MUID:95242842
A:Accession: S50776
A:Status: nucleic acid sequence not shown; translation not shown
A:Molecule type: DNA
A:Residues: 1-654 <VAW>
A:Cross-references: EMBL:Z34098; NID:g496934; PIDN:CAA84002.1; PID:g496953

A:Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1994
R:Vandenbol, M.; Durand, P.; Portetelle, D.; Hilger, F.
submitted to the Protein Sequence Database, September 1995
A:Reference number: S56835
A:Accession: S56999
A:Molecule type: DNA
A:Residues: 1-654 <VAN>
A:Cross-references: EMBL:Z49484; NID:g1015590; PIDN:CAA89506.1; PID:g1015591; GSPDB:GN00015591; GSPDB:GN00015591; GSPDB:GN00015591;
R:Purnelle, B.; Coster, F.; Goffeau, A.
submitted to the Protein Sequence Database, September 1995
A:Reference number: S56977
A:Accession: S56996
A:Molecule type: DNA
A:Residues: 637-654 <PUR>
A:Cross-references: EMBL:Z49484; GSPDB:GN00010; MIPS:YJL209W
C:Genetics:
A:Gene: SGP:CBP1; MIPS:YJL209W
A:Cross-references: SGD:S0003745; MIPS:YJL209W
A:Map position: 10L
A:Genome: nuclear
C:Function:
A:Description: pre-mRNA processing
A:Note: required for correct 5' terminal processing of cytochrome b pre-mRNA
C:Superfamily: CBP1 protein
C:Keywords: mitochondrion

Query Match 78.3% Score 36; DB 1; Length 654;
Best Local Similarity 75.0%; Pred. No. 59;
Matches 6; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKLCHQKK 8
:|||||
DB 514 KKLCHYKK 521

RESULT 3
E89046
protein C10G8.2 [imported] - Caenorhabditis elegans
C:Species: Caenorhabditis elegans
C:Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 10-May-2001
C:Accession: E89046
R:anonymous, The C. elegans Sequencing Consortium.
Science 282, 2012-2018, 1998
A:Title: Genome sequence of the nematode C. elegans: a platform for investigating biology
A:Reference number: A75000; MUID:99069613; PMID:9851916
A:Note: see websites genome.wustl.edu/gsc/C.elegans/ and www.sanger.ac.uk/Projects/C_elegans/
A:Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and
A:Accession: E89046
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-208 <SPO>
A:Cross-references: GB:chr_V; PIDN:AB09170.1; PID:g1572828; GSPDB:GN00023; CESP:C10G8.2
C:Genetics:
A:Gene: C10G8.2
A:Map position: 5

Query Match 73.9% Score 34; DB 2; Length 208;
Best Local Similarity 83.3%; Pred. No. 54;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 3 LCHQKK 8
:|||||
DB 172 MCHQKK 177

RESULT 4
T39478
zinc-finger protein - fission yeast (Schizosaccharomyces pombe)
C:Species: Schizosaccharomyces pombe
C:Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 02-Sep-2000
C:Accession: T39478
R:Lyne, M.; Rajadream, M.A.; Barrell, B.G.; Lucas, M.; Gaillardin, C.
submitted to the EMBL Data Library, August 1997

A:Reference number: 221858
A:Accession: T39478
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-547 <LYN>
A:Cross-references: EMBL:AL031349; PIDN:CAA20477.1; GSPDB:GN00067; SPDB:SPBC15D4.02
A:Experimental source: strain 972h-; cosmid cl5D4
C:Genetics:
A:Gene: SPDB:SPBC15D4.02
A:Map position: 2
C:Superfamily: GAL4 zinc binuclear cluster homology
F:169-206/Domain: GAL4 zinc binuclear cluster homology <GL4>

Query Match 73.9%; Score 34; DB 2; Length 547;
Best Local Similarity 71.4%; Pred. No. 1.2e+02;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHK 7
:|||||
DB 427 RKLCHK 433

RESULT 5
A71621
protein with 5'-3' exonuclease domain (Kem-1 family) PFB0205c - malaria parasite (Plasmodium falciparum)
C:Species: Plasmodium falciparum
C:Date: 13-Nov-1998 #sequence_revision 13-Nov-1998 #text_change 21-Jul-2000
C:Accession: A71621
R:Gardner, M.J.; Tettelin, H.; Carucci, D.J.; Cummings, L.M.; Aravind, L.; Koonin, E.; Perlea, M.; Salzberg, S.; Zhou, L.; Sutton, G.G.; Clayton, R.; White, O.; Smith, H. Science 282, 1126-1132, 1998
A:Title: Chromosome 2 sequence of the human malaria parasite Plasmodium falciparum.
A:Reference number: A71600; MUID:99021743
A:Accession: A71621
A:Status: preliminary; nucleic acid sequence not shown; translation not shown
A:Molecule type: DNA
A:Residues: 1-1188 <GAR>
A:Cross-references: GB:AF001380; GB:AF001362; NID:g3845120; PIDN:AAC71830.1; PID:g3845120
A:Experimental source: clone 3D7
C:Genetics:
A:Gene: PFB0205c

Query Match 73.9%; Score 34; DB 2; Length 1188;
Best Local Similarity 71.4%; Pred. No. 2.2e+02;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHK 7
:|||||
DB 1117 EELCHK 1123

RESULT 6
T30528
reverse transcriptase - rice blast fungus
C:Species: Magnaporthe grisea (rice blast)
C:Date: 22-Oct-1999 #sequence_revision 22-Oct-1999 #text_change 22-Oct-1999
C:Accession: T30528
R:Meyn III, M.A.; Farrall, L.; Valent, B.; Chumley, F.G.; Orbach, M.J. submitted to the EMBL Data Library, August 1997
A:Description: Magnaporthe grisea repeated DNA element MGR583 is a member of the LINE1 family
A:Reference number: 220845
A:Accession: T30528
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-1295 <MEY>
A:Cross-references: EMBL:AF018033; NID:g2454620; PID:g2454622; PIDN:AAB71689.1

Query Match 73.9%; Score 34; DB 2; Length 1295;
Best Local Similarity 71.4%; Pred. No. 2.3e+02;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 2 KLCHK 8
:|||||

Db 33 ELCHQK 39

RESULT 7

T31422
C-terminal domain-binding protein rA9 - rat
C:Species: Rattus norvegicus (Norway rat)
C>Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 07-Dec-1999
R:Yuryev, A.; Patturajan, M.; Litingtung, Y.; Joshi, R.V.; Gentile, C.; Gebara, M.; Cord
Proc. Natl. Acad. Sci. U.S.A. 93, 6975-6980, 1996
A:Title: The C-terminal domain of the largest subunit of RNA polymerase II interacts with
A:Reference number: 221024; MUID:96293459
A:Accession: T31422
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-1473 <YOR>
A:Cross-references: EMBL:U49057; NID:g1438533; PID:g1438534; PIDN:AAC52658.1
A:Experimental source: hippocampus

Query Match 73.9%; Score 34; DB 2; Length 1473;

Best Local Similarity 71.4%; Pred. No. 2.6e+02; Mismatches 1; Indels 0; Gaps 0;

Matches 5; Conservative 1;

QY 1 QKLCHQK 7

II:III I

Db 1425 QKICHSK 1431

RESULT 8

E72675
hypothetical protein APE0826 - Aeropyrum pernix (strain K1)
C:Species: Aeropyrum pernix
C>Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_change 20-Jun-2000
C:Accession: E72675
R:Kawarabayashi, Y.; Hino, Y.; Horikawa, H.; Yamazaki, S.; Haikawa, Y.; Jin-no, K.; Takah
awa, H.; Takamiya, M.; Masuda, S.; Funahashi, T.; Tanaka, T.; Kudoh, Y.; Yamazaki, J.; K
DNA Res. 6, 83-101, 1999
A:Title: Complete genome sequence of an aerobic hyper-thermophilic Crenarchaeon, Aeropyr
A:Reference number: A72450; MUID:99310339
A:Accession: E72675
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-263 <KAW>
A:Cross-references: DBJ:AP000060; NID:g5104188; PIDN:BAA79805.1; PID:g5104490
A:Experimental source: strain K1
C:Genetics:
A:Gene: APE0826
C:Superfamily: Aeropyrum pernix hypothetical protein APE0826

Query Match 71.7%; Score 33; DB 2; Length 263;

Best Local Similarity 83.3%; Pred. No. 99;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 3 LCHQK 8

IIIII

Db 258 LCHQK 263

RESULT 9

AF3147
glutamate-1-semialdehyde 2,1-aminotransferase hemL [imported] - Agrobacterium tumefaciens
C:Species: Agrobacterium tumefaciens
C>Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 01-Feb-2002
C:Accession: AF3147
R:Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, I
erage, G.; Gillet, W.; Grant, C.; Guenther, D.; Kutyavin, T.; Levy, R.; Li, M.; McClell
; Karp, P.; Romero, P.; Zhang, S.
Science 294, 2317-2323, 2001
A:Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm,
ster, E.W.
A:Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58.
A:Reference number: AB2577; PMID:11743193

A:Accession: AF3147

A:Status: preliminary

A:Molecule type: DNA

A:Residues: 1-467 <KUR>

A:Cross-references: GB:AE008689; PIDN:AAL45596.1; PID:g17743315; GSPDB:GN00187

A:Experimental source: strain C58 (Dupont)

C:Genetics:

A:Gene: hemL

A:Map position: linear chromosome

C:Superfamily: ornithine--oxo-acid aminotransferase

Query Match 71.7%; Score 33; DB 2; Length 467;

Best Local Similarity 83.3%; Pred. No. 1.6e+02;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHQ 6

IIIII

Db 220 QKLCHE 225

RESULT 10

D98140

hypothetical protein AGR_L159 [imported] - Agrobacterium tumefaciens (strain C58, Ce
C:Species: Agrobacterium tumefaciens
C>Date: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 11-Jan-2002
C:Accession: D98140
R:Goodner, B.; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, M.; Quorillo, B.; Goldm
A.; Liu, F.; Wollam, C.; Allinger, M.; Dougherty, D.; Scott, C.; Lappas, C.; Markelz,
Science 294, 2323-2328, 2001
A:Title: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium
A:Reference number: A97359; PMID:11743194
A:Accession: D98140
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-476 <KUR>
A:Cross-references: GB:AE007870; PIDN:AAK88646.1; PID:g15158369; GSPDB:GN00170
C:Genetics:
A:Gene: AGR_L159

A:Map position: linear chromosome

C:Superfamily: ornithine--oxo-acid aminotransferase

Query Match 71.7%; Score 33; DB 2; Length 476;

Best Local Similarity 83.3%; Pred. No. 1.6e+02;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHQ 6

IIIII

Db 229 QKLCHE 234

RESULT 11

S36336

probable transcription factor PLZF - human

C:Species: Homo sapiens (man)

C>Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 05-Nov-1999

C:Accession: S36336; S31989

R:Chen, Z.; Brand, N.J.; Chen, A.; Chen, S.J.; Tong, J.H.; Wang, Z.Y.; Waxman, S.; Ze

EMBO J. 12, 1161-1167, 1993

A:Title: Fusion between a novel Krueppel-like zinc finger gene and the retinoic acid

A:Reference number: S36336; MUID:93209216

A:Accession: S36336

A:Molecule type: mRNA

A:Residues: 1-673 <CHE>

A:Cross-references: EMBL:Z19002; NID:g38517; PIDN:CAA79489.1; PID:g38518

C:Genetics:

A:Gene: PLZF

C:Superfamily: POZ domain homology

C:Keywords: zinc finger

F:20-118/Domain: POZ domain homology <POZ>

Query Match 71.7%; Score 33; DB 2; Length 673;

Best Local Similarity 83.3%; Pred. No. 2.1e+02;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 2 KLCHQK 7
:|||||
Db 605 KLCHQK 610

RESULT 12

T00554
hypothetical protein At2g39440 [imported] - Arabidopsis thaliana
N:Alternate names: hypothetical protein F12L6.10
C:Species: Arabidopsis thaliana (mouse-ear cress)
C>Date: 01-Feb-1999 #sequence_revision 01-Feb-1999 #text_change 16-Feb-2001
C:Accession: T00554; D84817
R:Rounsley, S.D.; Lin, X.; Ketchum, K.A.; Crosby, M.L.; Brandon, R.C.; Sykes, S.M.; Kaul
submitted to the EMBL Data Library, July 1998
A:Description: Arabidopsis thaliana chromosome II BAC F12L6 genomic sequence.
A:Reference number: Z14168
A:Accession: T00554
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-773 <ROU>
A:Cross-references: EMBL:AC004218; NID:g3355463; PID:g3355473
A:Experimental source: cultivar Columbia
R:Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.;
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Unayam, L.; Tallon, L.;
euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, J.
Nature 402, 761-768, 1999
A:Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A:Reference number: A84420; MUID:20083487
A:Accession: D84817
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-773 <STO>
A:Cross-references: GB:AE002093; NID:g3355473; PIDN:ACC27835.1; GSPDB:GN00139
C:Genetics:
A:Gene: At2g39440; F12L6.10
A:Map position: 2
A:Introns: 35/1; 75/1; 117/1; 159/1; 222/3; 283/3; 294/1; 506/3; 567/1

Query Match 71.7%; Score 33; DB 2; Length 773;
Best Local Similarity 75.0%; Pred. No. 2.3e+02;
Matches 6; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHQK 8
:|||||
Db 462 KKLCDQK 469

RESULT 13

T18671
hypothetical protein B0240.2 - Caenorhabditis elegans
C:Species: Caenorhabditis elegans
C>Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 21-Jan-2000
C:Accession: T18671
R:White, S.
submitted to the EMBL Data Library, June 1996
A:Reference number: Z19004
A:Accession: T18671
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-1247 <WIL>
A:Cross-references: EMBL:Z74026; PIDN:CAA98#16.1; GSPDB:GN00023; CESP:B0240.2
C:Genetics:
A:Gene: CESP:B0240.2
A:Map position: 5
A:Introns: 29/2; 73/2; 108/2; 129/3; 202/2; 265/3; 401/3; 454/1; 466/3; 553/3; 594/2; 64

Query Match 71.7%; Score 33; DB 2; Length 1247;
Best Local Similarity 71.4%; Pred. No. 3.4e+02;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 2 KLCHQK 8
:|||||
Db 265 KLCHQK 271

RESULT 14

W6WLEP
E6 protein - European elk papillomavirus
C:Species: European elk papillomavirus
C>Date: 31-Mar-1989 #sequence_revision 31-Mar-1989 #text_change 11-May-2000
C:Accession: A29499; F94457; F94506
R:Ahola, H.; Bergman, P.; Stroem, A.C.; Moreno-Lopez, J.; Pettersson, U.
Gene 50, 195-205, 1986
A:Title: Organization and expression of the transforming region from the European elk
A:Reference number: A91567; MUID:87219878
A:Accession: A29499
A:Molecule type: DNA
A:Residues: 1-135 <AHO>
A:Cross-references: GB:M15953; NID:g333025; PIDN:AAA66849.1; PID:g484015
R:Eriksson, A.
unpublished results 1987, cited by GenBank
A:Reference number: A94457
A:Accession: F94457
A:Molecule type: DNA
A:Residues: 1-135 <ERI>
A:Cross-references: GB:M15953; NID:g333025; PIDN:AAA66849.1; PID:g484015
R:Pettersson, U.
submitted to GenBank, August 1987
A:Reference number: A94506
A:Accession: F94506
A:Molecule type: DNA
A:Residues: 1-135 <PFT>
A:Cross-references: GB:M15953; NID:g333025; PIDN:AAA66849.1; PID:g484015
C:Superfamily: papillomavirus E6 protein
C:Keywords: DNA binding; early protein; zinc finger

Query Match 69.6%; Score 32; DB 1; Length 135;
Best Local Similarity 71.4%; Pred. No. 88;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 2 KLCHQK 8
:|||||
Db 24 KRCHEK 30

RESULT 15

T16125
hypothetical protein F21H12.3 - Caenorhabditis elegans
C:Species: Caenorhabditis elegans
C>Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 24-Nov-1999
C:Accession: T16125
R:Favella, T.
submitted to the EMBL Data Library, July 1995
A:Description: The sequence of C. elegans cosmid F21H12.
A:Reference number: Z18464
A:Accession: T16125
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-210 <FAV>
A:Cross-references: EMBL:U23176; NID:g726404; PID:g726407; PIDN:AAC46715.1; CESP:F21H
A:Experimental source: strain Bristol N2
C:Genetics:
A:Gene: CESP:F21H12.3
A:Introns: 37/3; 62/2

Query Match 69.6%; Score 32; DB 2; Length 210;
Best Local Similarity 71.4%; Pred. No. 1.2e+02;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHQK 7
:|||||
Db 23 KNLCHQK 29

Search completed: November 1, 2002, 14:51:00
Job time : 4.01554 secs

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run On: November 1, 2002, 14:44:48 ; Search time 0.66881 Seconds
(without alignments)
292.168 Million cell updates/sec

Title: us-09-606-129a-19
Perfect score: 46
Sequence: 1 QKLCHQKK 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*

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5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep.*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	32	69.6	197	2	US-08-377-309-3
2	32	69.6	197	4	US-09-186-723-3
3	32	69.6	197	5	PCT-US96-00996-6
4	32	69.6	389	2	US-08-377-309-6
5	32	69.6	389	4	US-09-186-723-6
6	32	69.6	389	5	PCT-US96-00996-9
7	32	69.6	590	2	US-08-377-309-2
8	32	69.6	590	4	US-09-186-723-2
9	32	69.6	590	5	PCT-US96-00996-5
10	32	69.6	609	1	US-08-222-619-4
11	32	69.6	609	5	PCT-US95-04075-4
12	31	67.4	169	4	US-09-002-114-3
13	30	65.2	160	1	US-07-847-010-11
14	30	65.2	160	1	US-07-847-010-17
15	30	65.2	457	1	US-08-206-006-2
16	30	65.2	474	4	US-09-538-414-8
17	30	65.2	1104	2	US-08-327-832-5
18	30	65.2	1104	2	US-08-828-584-5
19	29	63.0	16	4	US-09-146-580-4
20	29	63.0	18	4	US-09-316-630-3
21	29	63.0	18	4	US-09-316-630-4
22	29	63.0	72	3	US-08-338-579A-101
23	29	63.0	72	3	US-08-338-579A-102
24	29	63.0	83	4	US-09-442-631-2
25	29	63.0	104	4	US-09-146-580-2
26	29	63.0	127	4	US-09-146-580-1
27	29	63.0	149	3	US-08-338-579A-95

28	29	63.0	308	1	US-07-828-700-9	Sequence 9, Appli
29	29	63.0	562	2	US-08-973-675-2	Sequence 2, Appli
30	29	63.0	664	4	US-09-268-140-2	Sequence 2, Appli
31	29	63.0	711	3	US-08-772-270A-12	Sequence 12, Appli
32	29	63.0	729	2	US-08-677-298-2	Sequence 2, Appli
33	29	63.0	781	1	US-08-280-690-2	Sequence 2, Appli
34	28	60.9	57	4	US-09-103-478-23	Sequence 23, Appli
35	28	60.9	57	4	US-09-193-931C-23	Sequence 23, Appli
36	28	60.9	77	4	US-09-262-773-207	Sequence 207, App
37	28	60.9	90	4	US-09-103-478-21	Sequence 21, Appli
38	28	60.9	90	4	US-09-103-478-22	Sequence 22, Appli
39	28	60.9	90	4	US-09-103-478-24	Sequence 24, Appli
40	28	60.9	90	4	US-09-103-478-25	Sequence 25, Appli
41	28	60.9	90	4	US-09-193-931C-21	Sequence 21, Appli
42	28	60.9	90	4	US-09-193-931C-22	Sequence 22, Appli
43	28	60.9	90	4	US-09-193-931C-24	Sequence 24, Appli
44	28	60.9	90	4	US-09-193-931C-25	Sequence 25, Appli
45	28	60.9	133	4	US-09-262-773-6	Sequence 6, Appli

ALIGNMENTS

RESULT 1
US-08-377-309-3
; Sequence 3, Application US/08377309A
; Patent No. 5965528
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: RECOMBINANT HUMAN ALPHA-FETOPROTEIN AS
; FILE REFERENCE: 06727/005001
; CURRENT APPLICATION NUMBER: US/08/377,309A
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 3
; LENGTH: 197
; TYPE: PRT
; ORGANISM: Homo sapiens
US-08-377-309-3

Query Match 69.6%; Score 32; DB 2; Length 197;
Best Local Similarity 50.0%; Pred. No. 1.1e+02;
Matches 4; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 QKLCHQKK 8
Db 77 EELCHEKE 84
:::|::|:

RESULT 2
US-09-186-723-3
; Sequence 3, Application US/09186723
; Patent No. 6288034
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: RECOMBINANT HUMAN ALPHA-FETOPROTEIN AS
; FILE REFERENCE: 06727/005002
; CURRENT APPLICATION NUMBER: US/09/186,723
; CURRENT FILING DATE: 1998-11-05
; EARLIER APPLICATION NUMBER: 08/377,309
; EARLIER FILING DATE: 1995-01-24
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 3
; LENGTH: 197
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-186-723-3

Query Match 69.6%; Score 32; DB 4; Length 197;

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Best Local Similarity 50.0%; Pred. No. 1.1e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHQKK 8
Db 77 EELCHERE 84

RESULT 3
PCT-US96-00996-6
; Sequence 6, Application PC/TUS9600996
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: EXPRESSION AND PURIFICATION OF CLONED
; HUMAN ALPHA-FETOPROTEIN
; NUMBER OF SEQUENCES: 24
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson P.C.
; STREET: 225 Franklin Street, Suite 3100
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02110-2804
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: PCT/US96/00996
; FILING DATE: 24-JAN-1996
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/377,317
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,311
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,309
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,316
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/505,012
; FILING DATE: 21-JULY-1995
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Clark, Paul T.
; REGISTRATION NUMBER: 30,162
; REFERENCE/DOCKET NUMBER: 06727/003001
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (617) 542-8906
; TELEFAX: (617) 542-8906
; TELEX: 200154
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 197 amino acids
; TYPE: amino acid
; STRANDEDNESS: not relevant
; TOPOLOGY: linear
; MOLECULE TYPE: protein
PCT-US96-00996-6

Query Match 69.6%; Score 32; DB 5; Length 197;
Best Local Similarity 50.0%; Pred. No. 1.1e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHQKK 8
Db 77 EELCHERE 84
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RESULT 4
US-08-377-309-6
; Sequence 6, Application US/08377309A
; Patent No. 5965528
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: RECOMBINANT HUMAN ALPHA-FETOPROTEIN AS
; AN IMMUNOSUPPRESSIVE AGENT
; FILE REFERENCE: 06727/005001
; CURRENT APPLICATION NUMBER: US/08/377,309A
; CURRENT FILING DATE: 1995-01-24
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 6
; LENGTH: 389
; TYPE: PRT
; ORGANISM: Homo sapiens
US-08-377-309-6

Query Match 69.6%; Score 32; DB 2; Length 389;
Best Local Similarity 50.0%; Pred. No. 2.1e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHQKK 8
Db 77 EELCHERE 84

RESULT 5
US-09-186-723-6
; Sequence 6, Application US/09186723
; Patent No. 6288034
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: RECOMBINANT HUMAN ALPHA-FETOPROTEIN AS
; AN IMMUNOSUPPRESSIVE AGENT
; FILE REFERENCE: 06727/005002
; CURRENT APPLICATION NUMBER: US/09/186,723
; CURRENT FILING DATE: 1998-11-05
; EARLIER APPLICATION NUMBER: 08/377,309
; EARLIER FILING DATE: 1995-01-24
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 6
; LENGTH: 389
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-186-723-6

Query Match 69.6%; Score 32; DB 4; Length 389;
Best Local Similarity 50.0%; Pred. No. 2.1e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHQKK 8
Db 77 EELCHERE 84

RESULT 6
PCT-US96-00996-9
; Sequence 9, Application PC/TUS9600996
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: EXPRESSION AND PURIFICATION OF CLONED
; HUMAN ALPHA-FETOPROTEIN
; NUMBER OF SEQUENCES: 24
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson P.C.
; STREET: 225 Franklin Street, Suite 3100
; CITY: Boston
; STATE: MA
; COUNTRY: USA
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; ZIP: 02110-2804
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: PCT/US96/00996
; FILING DATE: 24-JAN-1996
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/377,317
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,311
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,309
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,316
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/505,012
; FILING DATE: 21-JULY-1995
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Clark, Paul T.
; REGISTRATION NUMBER: 30,162
; REFERENCE/DOCKET NUMBER: 06727/003001
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (617) 542-5070
; TELEFAX: (617) 542-8906
; TELEX: 200154
; INFORMATION FOR SEQ ID NO: 9:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 389 amino acids
; TYPE: amino acid
; STRANDEDNESS: not relevant
; TOPOLOGY: linear
; MOLECULE TYPE: protein
PCT-US96-00996-9

Query Match 69.6% Score 32; DB 5; Length 389;
Best Local Similarity 50.0%; Pred. No. 2.1e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

Qy 1 OKLCHQKK 8
Db 77 EELCHEKE 84

RESULT 7
US-08-377-309-2
; Sequence 2, Application US/08377309A
; Patent No. 5965528
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: RECOMBINANT HUMAN ALPHA-FETOPROTEIN AS
; FILE REFERENCE: 06727/005001
; CURRENT APPLICATION NUMBER: US/08/377,309A
; CURRENT FILING DATE: 1995-01-24
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 2
; LENGTH: 590
; TYPE: PRT
; ORGANISM: Homo sapiens
US-08-377-309-2

Query Match 69.6% Score 32; DB 2; Length 590;
Best Local Similarity 50.0%; Pred. No. 3e+02;
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Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

Qy 1 OKLCHQKK 8
Db 77 EELCHEKE 84

RESULT 8
US-09-186-723-2
; Sequence 2, Application US/09186723
; Patent No. 6288034
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: RECOMBINANT HUMAN ALPHA-FETOPROTEIN AS
; FILE REFERENCE: 06727/005002
; CURRENT APPLICATION NUMBER: US/09/186,723
; CURRENT FILING DATE: 1998-11-05
; EARLIER APPLICATION NUMBER: 08/377,309
; EARLIER FILING DATE: 1995-01-24
; NUMBER OF SEQ ID NOS: 16
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 2
; LENGTH: 590
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-186-723-2

Query Match 69.6% Score 32; DB 4; Length 590;
Best Local Similarity 50.0%; Pred. No. 3e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

Qy 1 OKLCHQKK 8
Db 77 EELCHEKE 84

RESULT 9
PCT-US96-00996-5
; Sequence 5, Application PC/TUS9600996
; GENERAL INFORMATION:
; APPLICANT: Murgita, Robert A.
; TITLE OF INVENTION: EXPRESSION AND PURIFICATION OF CLONED
; HUMAN ALPHA-FETOPROTEIN
; NUMBER OF SEQUENCES: 24
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson P.C.
; STREET: 225 Franklin Street, Suite 3100
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02110-2804
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: PCT/US96/00996
; FILING DATE: 24-JAN-1996
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/377,317
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,311
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,309
; FILING DATE: 24-JAN-1995
; CLASSIFICATION:
; APPLICATION NUMBER: 08/377,316
; FILING DATE: 24-JAN-1995
```

CLASSIFICATION:
APPLICATION NUMBER: 08/505,012
FILING DATE: 21-JULY-1995
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Clark, Paul T.
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 06727/003001
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
TELEFAX: (617) 542-8906
TELEX: 200154
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 590 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US96-00996-5

Query Match 59.6%; Score 32; DB 5; Length 590;
Best Local Similarity 50.0%; Pred. No. 3e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCQKK 8
:|||||:
Db 77 EELCHEKE 84

RESULT 10
US-08-222-619-4
Sequence 4, Application US/08222619
Patent No. 5652352
GENERAL INFORMATION:
APPLICANT: Lichenstein, Henri
APPLICANT: Lyons, David
APPLICANT: Wurfel, Mark
APPLICANT: Wright, Samuel
TITLE OF INVENTION: Afamin: A Human Serum Albumin-Like
TITLE OF INVENTION: Protein
NUMBER OF SEQUENCES: 33
CORRESPONDENCE ADDRESS:
ADDRESSEE: Amgen Center, Patent Operations/RRC
STREET: 1840 Dehavilland Drive
CITY: Thousand Oaks
STATE: California
COUNTRY: U.S.
ZIP: 91320-1789
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/222,619
FILING DATE:
CLASSIFICATION: 435
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 609 amino acids
TYPE: amino acid
STRANDEDNESS: unknown
TOPOLOGY: unknown
MOLECULE TYPE: protein
US-08-222-619-4

Query Match 69.6%; Score 32; DB 1; Length 609;
Best Local Similarity 50.0%; Pred. No. 3.1e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCQKK 8
:|||||:

Db 96 EELCHEKE 103
RESULT 11
PCT-US95-04075-4
Sequence 4, Application PC/TUS9504075
GENERAL INFORMATION:
APPLICANT: AMGEN INC.
TITLE OF INVENTION: Afamin: A Human Serum Albumin-Like
TITLE OF INVENTION: Protein
NUMBER OF SEQUENCES: 33
CORRESPONDENCE ADDRESS:
ADDRESSEE: Amgen Center, Patent Operations/RRC
STREET: 1840 Dehavilland Drive
CITY: Thousand Oaks
STATE: California
COUNTRY: U.S.
ZIP: 91320-1789
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/04075
FILING DATE:
CLASSIFICATION:
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 609 amino acids
TYPE: amino acid
STRANDEDNESS: unknown
TOPOLOGY: unknown
MOLECULE TYPE: protein
PCT-US95-04075-4

Query Match 69.6%; Score 32; DB 5; Length 609;
Best Local Similarity 50.0%; Pred. No. 3.1e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCQKK 8
:|||||:

Db 96 EELCHEKE 103

RESULT 12
US-09-002-114-3
Sequence 3, Application US/09002114
Patent No. 6274720
GENERAL INFORMATION:
APPLICANT: Lal, Preeti
APPLICANT: Shah, Purvi
APPLICANT: Corley, Neil C.
TITLE OF INVENTION: HUMAN PREPRONEUROTENSIN/NEUROMEDIN N
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSEE: Incyte Pharmaceuticals, Inc.
STREET: 3174 Porter Drive
CITY: Palo Alto
STATE: CA
COUNTRY: USA
ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSeq for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/002,114
FILING DATE: Herewith
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:

; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Billings, Lucy J.
; REGISTRATION NUMBER: 36,749
; REFERENCE/DOCKET NUMBER: PF-0450 US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-855-0555
; TELEFAX: 650-845-4166
; TELEX:

; INFORMATION FOR SEQ ID NO: 3:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 169 amino acids

; TYPE: amino acid

; STRANDEDNESS: single

; TOPOLOGY: linear

; IMMEDIATE SOURCE:

; LIBRARY: GenBank

; CLONE: 163424

US-09-002-114-3

Query Match 67.4%; Score 31; DB 4; Length 169;

Best Local Similarity 57.1%; Pred. No. 1.5e+02;

Matches 4; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHK 7

Db 107 QKICHSR 113

RESULT 13

US-07-847-010-11

; Sequence 11, Application US/07847010

; Patent No. 5693495

; GENERAL INFORMATION:

; APPLICANT: Breiteneder, Heimo

; APPLICANT: Reikerstorfer, Arnold

; APPLICANT: Valenta, Rudolf

; APPLICANT: Hoffmann - Sommergruber, Karin

; APPLICANT: Breitenbach, Michael

; APPLICANT: Kraft, Dietrich

; APPLICANT: Rumpold, Heimit

; APPLICANT: Scheiner, Otto

; APPLICANT: Ebner, Christof

; APPLICANT: Ferreira, Fatima

; TITLE OF INVENTION: Allergens of Alder Pollen and

; APPLICATION INFORMATION:

; NUMBER OF SEQUENCES: 23

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Pennie & Edmonds

; STREET: 1155 Avenue of the Americas

; CITY: New York

; STATE: New York

; COUNTRY: U.S.A.

; ZIP: 10036-2711

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: PatentIn Release #1.0, Version #1.25

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/07/847,010

; FILING DATE: 01-JUN-1992

; CLASSIFICATION: 435

; ATTORNEY/AGENT INFORMATION:

; NAME: Jones III, Harry C

; REGISTRATION NUMBER: 20,280

; REFERENCE/DOCKET NUMBER: 6530-010

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: (212) 790-9090

; TELEFAX: (212) 869-9741/8864

; TELEX: 66141 PENNIE

; INFORMATION FOR SEQ ID NO: 11:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 160 amino acids

; TYPE: amino acid

; TOPOLOGY: linear

; MOLECULE TYPE: peptide

; HYPOTHETICAL: NO

; ORIGINAL SOURCE:

; ORGANISM: hazel (Corylus sp.)

; IMMEDIATE SOURCE:

; LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN

US-07-847-010-11

Query Match 65.2%; Score 30; DB 1; Length 160;

Best Local Similarity 50.0%; Pred. No. 2.1e+02;

Matches 4; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKLCHK 8

Db 97 EKVCHLK 104

RESULT 14

US-07-847-010-17

; Sequence 17, Application US/07847010

; Patent No. 5693495

; GENERAL INFORMATION:

; APPLICANT: Breiteneder, Heimo

; APPLICANT: Reikerstorfer, Arnold

; APPLICANT: Valenta, Rudolf

; APPLICANT: Hoffmann - Sommergruber, Karin

; APPLICANT: Breitenbach, Michael

; APPLICANT: Kraft, Dietrich

; APPLICANT: Rumpold, Heimit

; APPLICANT: Scheiner, Otto

; APPLICANT: Ebner, Christof

; APPLICANT: Ferreira, Fatima

; TITLE OF INVENTION: Allergens of Alder Pollen and

; APPLICATION INFORMATION:

; NUMBER OF SEQUENCES: 23

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Pennie & Edmonds

; STREET: 1155 Avenue of the Americas

; CITY: New York

; STATE: New York

; COUNTRY: U.S.A.

; ZIP: 10036-2711

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: PatentIn Release #1.0, Version #1.25

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/07/847,010

; FILING DATE: 01-JUN-1992

; CLASSIFICATION: 435

; ATTORNEY/AGENT INFORMATION:

; NAME: Jones III, Harry C

; REGISTRATION NUMBER: 20,280

; REFERENCE/DOCKET NUMBER: 6530-010

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: (212) 790-9090

; TELEFAX: (212) 869-9741/8864

; TELEX: 66141 PENNIE

; INFORMATION FOR SEQ ID NO: 17:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 160 amino acids

; TYPE: amino acid

; TOPOLOGY: linear

; MOLECULE TYPE: peptide

; HYPOTHETICAL: NO

; ORIGINAL SOURCE:

; ORGANISM: hazel (Corylus sp.)

; IMMEDIATE SOURCE:

; LIBRARY: POLLEN FROM ALLERGEN AB, ENGELHOLM, SWEDEN

US-07-847-010-17

Query Match 65.2%; Score 30; DB 1; Length 160;
Best Local Similarity 50.0%; Pred. No. 2.1e+02;
Matches 4; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKLCHQKK 8
:|:|:|:
Db 97 EKVCHLKL 104

RESULT 15

US-08-206-006-2
; Sequence 2, Application US/08206006
; Patent No. 5474912
; GENERAL INFORMATION:
; APPLICANT: Sherman, David H.
; APPLICANT: Hu, Wei-Shou
; APPLICANT: Malmberg, Li-Hong
; TITLE OF INVENTION: Method for Increasing Production of
; NUMBER OF SEQUENCES: 4
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lorraine R. Sherman
; STREET: 3201 Cavell Lane
; CITY: Minneapolis
; STATE: Minnesota
; COUNTRY: U.S.A.
; ZIP: 55426
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/206,006
; FILING DATE: 03-MAR-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Sherman, Lorraine R.
; REGISTRATION NUMBER: 30,105
; REFERENCE/DOCKET NUMBER: 6102
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 457 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-206-006-2

Query Match 65.2%; Score 30; DB 1; Length 457;
Best Local Similarity 66.7%; Pred. No. 5.1e+02;
Matches 4; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKLCHQ 6
:|:|:|:
Db 262 QRLCHE 267

Search completed: November 1, 2002, 14:51:58
Job time: 1.66881 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:40:53 ; Search time 1.8135 Seconds
(without alignments)
489.985 Million cell updates/sec

Title: US-09-606-129A-19

Perfect score: 46

Sequence: 1 QKLC HQKK 8

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

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- 2: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1981.DAT.*
- 3: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1982.DAT.*
- 4: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1983.DAT.*
- 5: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1984.DAT.*
- 6: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1985.DAT.*
- 7: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1986.DAT.*
- 8: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1987.DAT.*
- 9: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1988.DAT.*
- 10: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1989.DAT.*
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- 14: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1993.DAT.*
- 15: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1994.DAT.*
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- 19: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1998.DAT.*
- 20: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1999.DAT.*
- 21: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA2000.DAT.*
- 22: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	38	82.6	141	22	AB12078 Human 23 kD basic
2	35	78.3	91	22	AA87580 Human secreted pro
3	35	76.1	301	22	ABG07163 Novel human diagno
4	35	76.1	551	20	AA029955 Mouse CG1CE protei
5	34	73.9	60	22	AA84701 Human immune/haema
6	34	73.9	88	21	AA856915 Human prostate can
7	34	73.9	102	22	AA876544 Human colon cancer
8	34	73.9	104	22	AA012476 Human polypeptide
9	34	73.9	522	22	AA95513 Human protein sequ
10	34	73.9	790	22	AA93045 Human protein sequ
11	34	73.9	1188	21	AA818183 Plasmodium falcipa

12	33	71.7	51	22	AA87820 Human immune/haema
13	33	71.7	87	22	AA83632 Human immune/haema
14	33	71.7	112	22	AA878167 Human phosphatidic
15	33	71.7	196	22	ABG22874 Novel human diagno
16	33	71.7	197	21	AA808675 Arabidopsis thailia
17	33	71.7	210	22	ABG23740 Novel human diagno
18	33	71.7	220	22	ABG11715 Novel human diagno
19	33	71.7	242	21	AA808674 Arabidopsis thailia
20	33	71.7	305	22	ABG20204 Novel human diagno
21	33	71.7	435	22	ABG27718 Novel human diagno
22	33	71.7	678	22	AA825801 Human protein sequ
23	33	71.7	778	21	AA879180 Haematopoietic ste
24	32	69.6	23	19	AA879501 Wild-type yeast tr
25	32	69.6	23	19	AA879502 Loss-of-function m
26	32	69.6	23	19	AA879503 Loss-of-function m
27	32	69.6	23	19	AA879504 Loss-of-function m
28	32	69.6	23	19	AA879505 Loss-of-function m
29	32	69.6	23	19	AA879506 Loss-of-function m
30	32	69.6	23	19	AA879507 Loss-of-function m
31	32	69.6	23	19	AA879508 Loss-of-function m
32	32	69.6	23	19	AA879509 Loss-of-function m
33	32	69.6	23	19	AA879510 Human brain expres
34	32	69.6	33	22	AA859485 Human bone marrow
35	32	69.6	33	22	AB842370 Peptide #9876 enco
36	32	69.6	55	22	AB825845 Protein #7844 enco
37	32	69.6	55	22	AA863258 Human brain expres
38	32	69.6	55	22	AA876070 Human bone marrow
39	32	69.6	55	22	AA836177 Peptide #10214 enc
40	32	69.6	55	22	AA816899 Human nervous syst
41	32	69.6	68	22	AA806457 Human polypeptide
42	32	69.6	87	22	AA828959 Peptide #1610 enco
43	32	69.6	88	22	AB834127 Peptide #1633 enco
44	32	69.6	88	22	AB834127 Peptide #1633 enco
45	32	69.6	88	22	AB819568 Protein #1567 enco

ALIGNMENTS

RESULT 1

AB812078

ID AB812078 standard; peptide: 141 AA.

XX AC AB812078;

XX DT 11-JAN-2002 (first entry)

XX DE Human 23 kD basic protein homologue, SEQ ID NO:2448.

XX KW Human; cytokine; cell proliferation; cell differentiation; growth factor; haematopoiesis regulation; tissue growth; immunomodulator; activin; inhibin; chemotaxis; chemokinesis; thrombolysis; oncogenesis; proliferation; metastasis; cancer; tumour; haematopoietic disorder; myeloid cell disorder; lymphoid cell disorder; asthma; arthritis; chronic inflammatory condition; proliferative retinopathy; atherosclerosis; coronary heart disease; arterial ischaemia; bone disorder; osteoporosis; vascular growth disorder; tissue regeneration; wound healing; infection; immune disorder; cell culture; drug screening; gene therapy; antiinflammatory; antiasthmatic; antiarthritic; haemostatic; antiarteriosclerotic; cytostatic; osteopathic; vasotropic; cardiant; virucide; antibacterial; antifungal; vulnery; antiulcer.

XX KW Homo sapiens.

XX OS WO200157188-A2.

XX PN 09-AUG-2001.

XX PD 05-FEB-2001; 2001WO-US03800.

XX PF 03-FEB-2000; 2000US-0496914.

XX PR 27-APR-2000; 2000US-0560875.

XX (HYSE-) HYSEQ INC.
 PA Tang YT, Liu C, Drmanac RT;
 PI
 XX WPI; 2001-457740/49.
 DR N-PSDB; ABA09322.
 XX
 XX Human proteins and DNA encoding sequences useful for preventing,
 PT treating or ameliorating a medical condition in a mammalian subject
 PT e.g. arthritis and cancer -
 XX
 XX Claim 20; Page 305; 1963pp; English.
 XX
 CC Sequences ABB10981-ABB12330 represent 1350 novel human polypeptides, and
 CC sequences ABA08225-ABA09574 represent nucleic acids encoding them. The
 CC invention also relates to vectors and recombinant host cells comprising a
 CC nucleotide of the invention, methods of producing the novel polypeptides,
 CC antibodies against the polypeptides, methods of detecting the nucleotides
 CC or polypeptides in a sample, and methods of identifying compounds which
 CC bind to polypeptides of the invention. Although novel, many of the
 CC polypeptides of the invention have homology to known proteins, thereby
 CC giving an insight into their probable biological activities, and hence
 CC potential therapeutic applications. The polypeptides of the invention may
 CC have various activities, including cytokine, cell proliferation or cell
 CC differentiation activities; stem cell growth factor activity;
 CC haematopoiesis regulatory activity; tissue growth activity;
 CC immunomodulatory activity; activin- or inhibin-related activities;
 CC chemotactic or chemokinetic activities; haemostatic, thrombotic or
 CC thrombolytic activities; receptor or ligand activities; or may be
 CC involved in oncogenesis, cancer cell proliferation or metastasis.
 CC Depending on their biological activities, polypeptides and nucleotides of
 CC the invention are useful for preventing, treating or ameliorating medical
 CC conditions, e.g., by protein or gene therapy. Such conditions include
 CC cancers, haematopoietic disorders (e.g., myeloid or lymphoid cell
 CC disorders), chronic inflammatory conditions (e.g., asthma or arthritis),
 CC proliferative retinopathy, atherosclerosis, coronary heart disease,
 CC arterial ischaemia, bone disorders (e.g., osteoporosis), and abnormal
 CC vascular growth. Polypeptides involved with tissue regeneration and
 CC repair (or nucleic acids encoding them) may be used to promote wound
 CC healing (e.g., of burns, incisions and ulcers), while those with
 CC immunomodulatory activities may be used in the treatment of viral,
 CC bacterial and fungal infections in addition to immune disorders.
 CC Polypeptides with growth factor activity may be used in cell cultures to
 CC promote cell growth. For example, such polypeptides may be used to
 CC manipulate stem cells in culture to give rise to neuroepithelial cells
 CC that can be used to augment or replace cells damaged by illness,
 CC autoimmune disease or accidental damage. The polypeptides and nucleotides
 CC may also be used in the diagnosis of the above conditions, and in drug
 CC screening techniques. The present sequence represents a novel human
 CC polypeptide of the invention.
 XX
 SQ Sequence 141 AA;
 Query Match 82.6%; Score 38; DB 22; Length 141;
 Best Local Similarity 75.0%; Pred. No. 20;
 Matches 6; Conservative 2; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QKLCQK 8
 | | | | |
 Db 134 QKCYQK 141
 RESULT 2
 AAB75580
 ID AAB75580 standard; Protein; 91 AA.
 XX
 XX AAB75580;
 XX
 XX 06-APR-2001 (first entry)
 XX
 XX Human secreted protein sequence encoded by gene 28 SEQ ID NO:134.
 DE
 XX

KW Human; secreted protein; immunosuppressive; antiarthritic; antirheumatic;
 KW antiproliferative; cytostatic; cardiant; vasotropic; cerebroprotective;
 KW neurotropic; neuroprotective; antibacterial; virucide; fungicide;
 KW opthalmological; vulnerary; autoimmune disease; cardiovascular disorder;
 KW hyperproliferative disorders; cerebrovascular disorder; wound healing;
 KW nervous system disorder; ocular disorder; skin ageing; chemotaxis;
 KW food additive.
 XX
 OS Homo sapiens.
 XX
 XX WQ200077026-A1.
 PN
 XX 21-DEC-2000.
 PD
 XX 01-JUN-2000; 2000WO-US14973.
 PF
 XX 11-JUN-1999; 99US-0138630.
 PR
 XX (HUMA-) HUMAN GENOME SCI INC.
 PA (ROSE/) ROSEN C A.
 XX
 XX Rosen CA, Ruben SM, Komatsoulis GA;
 PI
 XX WPI; 2001-071258/08.
 DR
 DR N-PSDB; AAF64203.
 XX
 XX Nucleic acid molecules encoding human secreted proteins, used in
 PT preventing, treating or ameliorating a disorder, e.g. Alzheimer's and
 PT Parkinson's diseases and cancers -
 PT
 XX Disclosure; Page 60; 542pp; English.
 PS
 XX Human secreted proteins AAB75506 - AAB75554 are encoded by polynucleotide
 CC sequences AAF64176 - AAF64224. The specification includes amino acid
 CC secreted proteins, and protein sequences with which they share homology.
 CC The proteins and polynucleotides, their agonists and antagonists have
 CC activities dependent on the tissues and cells in which they are
 CC expressed, examples of these activities include, immunosuppressive;
 CC antiarthritic; antirheumatic; antiproliferative; cytostatic; cardiant;
 CC vasotropic; cerebroprotective; neurotropic; neuroprotective; antibacterial;
 CC virucide; fungicide; opthalmological; and vulnerary. The proteins,
 CC polynucleotides, agonists and antagonists can be used to treat or detect
 CC or diagnose various diseases and disorders including, autoimmune
 CC diseases e.g. rheumatoid arthritis, hyperproliferative disorders
 CC e.g. neoplasms of the breast or liver, cardiovascular disorders
 CC e.g. cardiac arrest, cerebrovascular disorders e.g. cerebral ischaemia,
 CC angiogenesis, nervous system disorders e.g. Alzheimer's disease,
 CC infections caused by bacteria, viruses and fungi and ocular disorders
 CC e.g. corneal infection. The polypeptides can also be used to aid wound
 CC healing and epithelial cell proliferation, to prevent skin ageing due to
 CC sunburn, to maintain organs before transplantation, for supporting cell
 CC culture of primary tissues, to regenerate tissues and in chemotaxis. The
 CC polypeptides can also be used as a food additive or preservative to
 CC increase or decrease storage capabilities. Included in the invention are
 CC polynucleotide sequences AAF64167 - AAF64175 and peptide AAB75505 which
 CC are used in the isolation, identification and characterisation of the
 CC proteins of the invention.
 XX
 SQ Sequence 91 AA;
 Query Match 78.3%; Score 36; DB 22; Length 91;
 Best Local Similarity 100.0%; Pred. No. 30;
 Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QKLCQK 6
 | | | | |
 Db 30 QKLCQK 35
 RESULT 3
 ABB07163
 ID ABB07163 standard; Protein; 301 AA.

PR 31-JAN-2000; 2000US-0179065.
PR 04-FEB-2000; 2000US-0180628.
PR 24-FEB-2000; 2000US-0184664.
PR 02-MAR-2000; 2000US-0186350.
PR 16-MAR-2000; 2000US-0189874.
PR 17-MAR-2000; 2000US-0190076.
PR 18-APR-2000; 2000US-0198123.
PR 19-MAY-2000; 2000US-0205515.
PR 07-JUN-2000; 2000US-0209467.
PR 28-JUN-2000; 2000US-0214886.
PR 30-JUN-2000; 2000US-0215135.
PR 07-JUL-2000; 2000US-0216647.
PR 07-JUL-2000; 2000US-0216880.
PR 11-JUL-2000; 2000US-0217487.
PR 11-JUL-2000; 2000US-0217496.
PR 14-JUL-2000; 2000US-0218290.
PR 26-JUL-2000; 2000US-0220963.
PR 26-JUL-2000; 2000US-0220964.
PR 14-AUG-2000; 2000US-0224518.
PR 14-AUG-2000; 2000US-0224519.
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PR 14-AUG-2000; 2000US-0225447.
PR 14-AUG-2000; 2000US-0225757.
PR 14-AUG-2000; 2000US-0225758.
PR 14-AUG-2000; 2000US-0225759.
PR 18-AUG-2000; 2000US-0226279.
PR 22-AUG-2000; 2000US-0226681.
PR 22-AUG-2000; 2000US-0226688.
PR 22-AUG-2000; 2000US-0227182.
PR 23-AUG-2000; 2000US-0227009.
PR 30-AUG-2000; 2000US-0228924.
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PR 01-SEP-2000; 2000US-0229344.
PR 01-SEP-2000; 2000US-0229345.
PR 05-SEP-2000; 2000US-0229359.
PR 05-SEP-2000; 2000US-0229513.
PR 06-SEP-2000; 2000US-0230437.
PR 06-SEP-2000; 2000US-0230438.
PR 08-SEP-2000; 2000US-0231242.
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PR 08-SEP-2000; 2000US-0231244.
PR 08-SEP-2000; 2000US-0231413.
PR 08-SEP-2000; 2000US-0231414.
PR 08-SEP-2000; 2000US-0232080.
PR 08-SEP-2000; 2000US-0232081.
PR 12-SEP-2000; 2000US-0231968.
PR 14-SEP-2000; 2000US-0232397.
PR 14-SEP-2000; 2000US-0232398.
PR 14-SEP-2000; 2000US-0232399.
PR 14-SEP-2000; 2000US-0232400.
PR 14-SEP-2000; 2000US-0232401.
PR 14-SEP-2000; 2000US-0233063.
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PR 21-SEP-2000; 2000US-0234223.
PR 21-SEP-2000; 2000US-0234274.
PR 25-SEP-2000; 2000US-0234957.
PR 25-SEP-2000; 2000US-0234958.
PR 26-SEP-2000; 2000US-0235484.
PR 27-SEP-2000; 2000US-0235834.
PR 29-SEP-2000; 2000US-0235836.
PR 29-SEP-2000; 2000US-0236327.
PR 29-SEP-2000; 2000US-0236367.
PR 29-SEP-2000; 2000US-0236368.
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PR 02-OCT-2000; 2000US-0236802.
PR 02-OCT-2000; 2000US-0237037.
PR 02-OCT-2000; 2000US-0237038.
PR 02-OCT-2000; 2000US-0237039.
PR 02-OCT-2000; 2000US-0237040.
PR 13-OCT-2000; 2000US-0239935.
PR 13-OCT-2000; 2000US-0239937.
PR 20-OCT-2000; 2000US-0240960.
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PR 20-OCT-2000; 2000US-0241785.
PR 20-OCT-2000; 2000US-0241786.
PR 20-OCT-2000; 2000US-0241787.
PR 20-OCT-2000; 2000US-0241808.
PR 20-OCT-2000; 2000US-0241809.
PR 20-OCT-2000; 2000US-0241826.
PR 01-NOV-2000; 2000US-0244617.
PR 08-NOV-2000; 2000US-0246474.
PR 08-NOV-2000; 2000US-0246475.
PR 08-NOV-2000; 2000US-0246476.
PR 08-NOV-2000; 2000US-0246477.
PR 08-NOV-2000; 2000US-0246478.
PR 08-NOV-2000; 2000US-0246523.
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PR 08-NOV-2000; 2000US-0246525.
PR 08-NOV-2000; 2000US-0246526.
PR 08-NOV-2000; 2000US-0246527.
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PR 17-NOV-2000; 2000US-0249210.
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PR 17-NOV-2000; 2000US-0249214.
PR 17-NOV-2000; 2000US-0249215.
PR 17-NOV-2000; 2000US-0249216.
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PR 17-NOV-2000; 2000US-0249264.
PR 17-NOV-2000; 2000US-0249265.
PR 17-NOV-2000; 2000US-0249297.
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PR 03-DEC-2000; 2000US-0251030.
PR 05-DEC-2000; 2000US-0251988.
PR 05-DEC-2000; 2000US-0256719.
PR 06-DEC-2000; 2000US-0251479.
PR 08-DEC-2000; 2000US-0251856.
PR 08-DEC-2000; 2000US-0251868.
PR 08-DEC-2000; 2000US-0251869.
PR 08-DEC-2000; 2000US-0251989.
PR 08-DEC-2000; 2000US-0251990.
PR 11-DEC-2000; 2000US-0254097.
PR 05-JAN-2001; 2001US-0259678.
PR XX (HUMA-) HUMAN GENOME SCI INC.
PR PA Rosen CA, Barash SC, Ruben SM;
PR PI WPI; 2001-483426/52.
PR XX N-PSDB; AAK57482.
PR DR Nucleic acids encoding human immune/hematopoietic antigen polypeptides,
PR XX useful for preventing, diagnosing and/or treating cancers and
PT

CC represent oligonucleotides, all of which are used in the exemplification
CC of the present invention.

SQ Sequence 522 AA;
Query Match 73.9%; Score 34; DB 22; Length 522;
Best Local Similarity 62.5%; Pred. No. 3.2e+02;
Matches 5; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 OKLCHOKK 8
I:||||:
Db 157 QELCHQOE 164

RESULT 10
AAB93045
ID AAB93045 standard; Protein: 790 AA.

XX AC AAB93045;

XX DT 26-JUN-2001 (first entry)

XX DE Human protein sequence SEQ ID NO:11834.

XX KW Human; primer; detection; diagnosis; antisense therapy; gene therapy.

XX OS Homo sapiens.

XX PN EPI074617-A2.

XX PD 07-FEB-2001.

XX PF 28-JUL-2000; 2000EP-0116126.

XX PR 29-JUL-1999; 99JP-0248036.

XX PR 27-AUG-1999; 99JP-0300253.

XX PR 11-JAN-2000; 2000JP-0118776.

XX PR 02-MAY-2000; 2000JP-0183767.

XX PR 09-JUN-2000; 2000JP-0241899.

XX PA (HELI-) HELIX RES INST.

XX PI Ota T, Isogai T, Nishikawa T, Hayashi K, Saito K, Yamamoto J;

XX PI Ishii S, Sugiyama T, Wakamatsu A, Nagai K, Otsuki T;

XX DR WPI; 2001-318749/34.

XX PT Primer sets for synthesizing polynucleotides, particularly the 5602

XX PT full-length cDNAs defined in the specification, and for the detection

XX PT and/or diagnosis of the abnormality of the proteins encoded by the

XX PT full-length cDNAs -

XX PS Claim 8; SEQ ID 11834; 2537pp + CD ROM; English.

XX The present invention describes primer sets for synthesising 5602
CC full-length cDNAs defined in the specification, where a primer set
CC comprises: (a) an oligo-dT primer and an oligonucleotide complementary
CC to the complementary strand of a polynucleotide which comprises one of
CC the 5602 nucleotide sequences defined in the specification, where the
CC oligonucleotide comprises at least 15 nucleotides; or (b) a combination
CC of an oligonucleotide comprising a sequence complementary to the
CC complementary strand of a polynucleotide which comprises a 5'-end
CC sequence and an oligonucleotide comprising a sequence complementary to a
CC polynucleotide which comprises a 3'-end sequence, where the
CC oligonucleotide comprises at least 15 nucleotides and the combination of
CC the 5'-end sequence/3'-end sequence is selected from those defined in
CC the specification. The primer sets can be used in antisense therapy and
CC in gene therapy. The primers are useful for synthesising polynucleotides,
CC particularly full-length cDNAs. The primers are also useful for the
CC detection and/or diagnosis of the abnormality of the proteins encoded by
CC the full-length cDNAs. The primers allow obtaining of the full-length
CC cDNAs easily without any specialised methods. AAH03166 to AAH13628 and
CC AAH13633 to AAH18742 represent human cDNA sequences; AAB92446 to

CC AAB95893 represent human amino acid sequences; and AAH13629 to AAH13632
CC represent oligonucleotides, all of which are used in the exemplification
CC of the present invention.

SQ Sequence 790 AA;

Query Match 73.9%; Score 34; DB 22; Length 790;
Best Local Similarity 62.5%; Pred. No. 4.7e+02;
Matches 5; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 OKLCHOKK 8
I:||||:
Db 157 QELCHQOE 164

RESULT 11

AAB18183
ID AAB18183 standard; Protein: 1188 AA.

XX AC AAB18183;

XX DT 07-NOV-2000 (first entry)

XX DE Plasmodium falciparum chromosome 2 related protein SEQ ID NO:40.

XX KW Plasmodium falciparum; chromosome 2; human malaria parasite; vaccine;

XX KW antimalarial; malaria; protozoacide; infection; insecticide.

XX OS Plasmodium falciparum.

XX PN WO200025728-A2.

XX PD 11-MAY-2000.

XX PF 05-NOV-1999; 99WO-US26796.

XX PR 05-NOV-1998; 98US-0107131.

XX PA (HOFF/) HOFFMAN S.

XX PA (CARU/) CARUCCI D.

XX PA (GARD/) GARDNER M.

XX PA (VENT/) VENTER J C.

XX PI Hoffman S, Carucci D, Gardner M, Venter JC;

XX DR WPI; 2000-365347/31.

XX PS Disclosure; Page 101-104; 577pp; English.

XX The present invention describes proteins and their fragments (I) encoded
CC by chromosome 2 of the human malaria parasite, Plasmodium falciparum.
CC Also described are: (1) nucleotide sequences (II) encoding (I); and (2)
CC vaccines against P. falciparum infection comprising (I) or (II).
CC (I) and (II) are useful for the development of vaccines against
CC P. falciparum infection. (I) and polyclonal antisera or a monoclonal
CC antibody raised to immunogens comprising the sequences of (I), are
CC useful in the detection of infection with P. falciparum. Furthermore,
CC (I) (especially when they are rifins or secreted or membrane proteins)
CC can aid the identification of drugs to treat or prevent P. falciparum
CC infection, or they can be used to identify drug resistance in
CC P. falciparum. Sequencing of the plasmodium chromosome 2 and the
CC subsequent identification of proteins encoded by it will help to expand
CC our understanding of parasite biology, a process hampered by the
CC complexity of the parasitic lifecycle, and provide new targets for
CC vaccine and drug development. Parasite resistance to drugs and mosquito
CC resistance to insecticides have led to a resurgence of malaria in many
CC parts of the world, and there is a pressing need for vaccines and new
CC drugs. AAH70078 to AAH70287 and AAB18144 to AAB18352 represent nucleotide
CC and protein sequences given in the present invention, but which are not

CC specifically mentioned within the specification.

XX Sequence 1188 AA;

Query Match 73.9%; Score 34; DB 21; Length 1188;

Best Local Similarity 71.4%; Pred. No. 6.8e+02;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 OKLCHQK 7

:::|||||

Db 1117 EELCHQK 1123

RESULT 12

AAM87820

ID AAM87820 standard; Protein; 51 AA.

XX AC AAM87820;

XX DT 07-NOV-2001 (first entry)

XX DE Human immune/haematopoietic antigen SEQ ID NO:15413.

XX KW Human; immune; haematopoietic; immune/haematopoietic antigen; cancer;

XX KW cytosolic; gene therapy; vaccine; metastasis.

XX OS Homo sapiens.

XX PN WO200157182-A2.

XX PD 09-AUG-2001.

XX PF 17-JAN-2001; 2001WO-US01354.

XX PR 31-JAN-2000; 2000US-0179065.

PR 04-FEB-2000; 2000US-0180628.

PR 24-FEB-2000; 2000US-0184664.

PR 02-MAR-2000; 2000US-0186350.

PR 16-MAR-2000; 2000US-0189874.

PR 17-MAR-2000; 2000US-0190076.

PR 18-APR-2000; 2000US-0198123.

PR 19-MAY-2000; 2000US-0205515.

PR 07-JUN-2000; 2000US-0209467.

PR 28-JUN-2000; 2000US-0214886.

PR 30-JUN-2000; 2000US-0215135.

PR 07-JUL-2000; 2000US-0216647.

PR 07-JUL-2000; 2000US-0216880.

PR 11-JUL-2000; 2000US-0217487.

PR 11-JUL-2000; 2000US-0217496.

PR 14-JUL-2000; 2000US-0218290.

PR 26-JUL-2000; 2000US-0220963.

PR 26-JUL-2000; 2000US-0220964.

PR 14-AUG-2000; 2000US-0224518.

PR 14-AUG-2000; 2000US-0224519.

PR 14-AUG-2000; 2000US-0225213.

PR 14-AUG-2000; 2000US-0225214.

PR 14-AUG-2000; 2000US-0225266.

PR 14-AUG-2000; 2000US-0225267.

PR 14-AUG-2000; 2000US-0225268.

PR 14-AUG-2000; 2000US-0225270.

PR 14-AUG-2000; 2000US-0225447.

PR 14-AUG-2000; 2000US-0225757.

PR 14-AUG-2000; 2000US-0225758.

PR 14-AUG-2000; 2000US-0225759.

PR 18-AUG-2000; 2000US-0226279.

PR 22-AUG-2000; 2000US-0226681.

PR 22-AUG-2000; 2000US-0226686.

PR 23-AUG-2000; 2000US-0227182.

PR 30-AUG-2000; 2000US-0227009.

PR 01-SEP-2000; 2000US-0228924.

PR 01-SEP-2000; 2000US-0229287.

PR 01-SEP-2000; 2000US-0229343.

PR 01-SEP-2000; 2000US-0229344.

PR 01-SEP-2000; 2000US-0229345.
PR 05-SEP-2000; 2000US-0229509.
PR 05-SEP-2000; 2000US-0229513.
PR 06-SEP-2000; 2000US-0230437.
PR 06-SEP-2000; 2000US-0230438.
PR 08-SEP-2000; 2000US-0231243.
PR 08-SEP-2000; 2000US-0231244.
PR 08-SEP-2000; 2000US-0231413.
PR 08-SEP-2000; 2000US-0231414.
PR 08-SEP-2000; 2000US-0232080.
PR 08-SEP-2000; 2000US-0232081.
PR 12-SEP-2000; 2000US-0231968.
PR 14-SEP-2000; 2000US-0232397.
PR 14-SEP-2000; 2000US-0232398.
PR 14-SEP-2000; 2000US-0232399.
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PR 14-SEP-2000; 2000US-0232401.
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PR 14-SEP-2000; 2000US-0233064.
PR 14-SEP-2000; 2000US-0233065.
PR 21-SEP-2000; 2000US-0234223.
PR 21-SEP-2000; 2000US-0234274.
PR 25-SEP-2000; 2000US-0234997.
PR 25-SEP-2000; 2000US-0234998.
PR 26-SEP-2000; 2000US-0235484.
PR 27-SEP-2000; 2000US-0235834.
PR 27-SEP-2000; 2000US-0235836.
PR 29-SEP-2000; 2000US-0236327.
PR 29-SEP-2000; 2000US-0236367.
PR 29-SEP-2000; 2000US-0236368.
PR 29-SEP-2000; 2000US-0236369.
PR 29-SEP-2000; 2000US-0236370.
PR 02-OCT-2000; 2000US-0236802.
PR 02-OCT-2000; 2000US-0237037.
PR 02-OCT-2000; 2000US-0237038.
PR 02-OCT-2000; 2000US-0237039.
PR 02-OCT-2000; 2000US-0237040.
PR 13-OCT-2000; 2000US-0239935.
PR 13-OCT-2000; 2000US-0239937.
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PR 20-OCT-2000; 2000US-0241221.
PR 20-OCT-2000; 2000US-0241785.
PR 20-OCT-2000; 2000US-0241786.
PR 20-OCT-2000; 2000US-0241787.
PR 20-OCT-2000; 2000US-0241808.
PR 20-OCT-2000; 2000US-0241809.
PR 20-OCT-2000; 2000US-0241826.
PR 01-NOV-2000; 2000US-0244617.
PR 08-NOV-2000; 2000US-0246474.
PR 08-NOV-2000; 2000US-0246475.
PR 08-NOV-2000; 2000US-0246476.
PR 08-NOV-2000; 2000US-0246477.
PR 08-NOV-2000; 2000US-0246478.
PR 08-NOV-2000; 2000US-0246523.
PR 08-NOV-2000; 2000US-0246524.
PR 08-NOV-2000; 2000US-0246525.
PR 08-NOV-2000; 2000US-0246526.
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PR 08-NOV-2000; 2000US-0246610.
PR 08-NOV-2000; 2000US-0246611.
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PR 17-NOV-2000; 2000US-0249215.
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PR 17-NOV-2000; 2000US-0249217.
PR 17-NOV-2000; 2000US-0249218.
PR 17-NOV-2000; 2000US-0249244.
PR 17-NOV-2000; 2000US-0249245.
PR 17-NOV-2000; 2000US-0249264.
PR 17-NOV-2000; 2000US-0249265.
PR 17-NOV-2000; 2000US-0249297.
PR 17-NOV-2000; 2000US-0249299.
PR 17-NOV-2000; 2000US-0249300.
PR 01-DEC-2000; 2000US-0250160.
PR 01-DEC-2000; 2000US-0250391.
PR 05-DEC-2000; 2000US-0251030.
PR 05-DEC-2000; 2000US-0251988.
PR 05-DEC-2000; 2000US-0256719.
PR 06-DEC-2000; 2000US-0256719.
PR 08-DEC-2000; 2000US-0251479.
PR 08-DEC-2000; 2000US-0251856.
PR 08-DEC-2000; 2000US-0251868.
PR 08-DEC-2000; 2000US-0251869.
PR 08-DEC-2000; 2000US-0251989.
PR 08-DEC-2000; 2000US-0251990.
PR 11-DEC-2000; 2000US-0254097.
PR 05-JAN-2001; 2001US-0259678.
XX
XX (HUMA-) HUMAN GENOME SCI INC.
XX
XX Rosen CA, Barash SC, Ruben SM;
XX
XX WPT; 2001-483426/52.
DR N-PSDB; AAK60601.
XX
XX Nucleic acids encoding human immune/hematopoietic antigen polypeptides,
PT useful for preventing, diagnosing and/or treating cancers and
PT metastasis -
XX
XX Claim 11; SEQ ID NO 15413; 3071pp + Sequence Listing; English.
XX
XX AAK54951 to AAK64702 encode the human immune/hematopoietic antigen (I)
CC amino acid sequences given in AAK82170 to AAK91921. (I) have cytostatic
CC activity, and can be used in gene therapy and vaccine production. (I)
CC proteins and polynucleotides may be used in the prevention, diagnosis and
CC treatment of diseases associated with inappropriate (I) expression. For
CC example, they may be used to treat disorders associated with decreased
CC expression by rectifying mutations or deletions in a patient's genome
CC that affect the activity of (I) by expressing inactive proteins or to
CC supplement the patients own production of (I). Additionally, (I)
CC polynucleotides may be used to produce the secreted (I), by inserting
CC the nucleic acids into a host cell and culturing the cell to express the
CC protein. (I) proteins and polynucleotides may be used to prevent,
CC diagnose and treat immune/hematopoietic-related diseases, especially
CC cancers and cancer metastases of hematopoietic-derived cells. AAK64703
CC to AAK87694 represent human immune/hematopoietic antigen genomic
CC sequences from the present invention. AAK54942 to AAK54950 and AAK82169
CC represent sequences used in the exemplification of the present invention.
XX
XX Sequence 51 AA;
SQ
Query Match 71.7%; Score 33; DB 22; Length 51;
Best Local Similarity 62.5%; Pred. No. 59;
Matches 5; Conservative 3; Mismatches 0; Indels 0; Gaps 0;
Oy 1 QKLCHQKK 8
II:::II
Db 15 QKICNKKK 22
RESULT 13
AAM83632
ID AAM83632 standard; Protein; 87 AA.
XX
XX AAM83632;
AC
XX

DT 07-NOV-2001 (first entry)
XX Human immune/hematopoietic antigen SEQ ID NO:11225.
DE
XX Human; immune; haematopoietic; immune/haematopoietic antigen; cancer;
KW cytostatic; gene therapy; vaccine; metastasis.
XX
XX Homo sapiens.
XX
XX WO200157182-A2.
XX
XX 09-AUG-2001.
XX
XX 17-JAN-2001; 2001WO-US01354.
XX
XX 31-JAN-2000; 2000US-0179065.
PR 04-FEB-2000; 2000US-0180628.
PR 24-FEB-2000; 2000US-0184664.
PR 02-MAR-2000; 2000US-0186350.
PR 16-MAR-2000; 2000US-0189874.
PR 17-MAR-2000; 2000US-0190076.
PR 18-APR-2000; 2000US-0198123.
PR 19-MAY-2000; 2000US-0205515.
PR 07-JUN-2000; 2000US-0209467.
PR 28-JUN-2000; 2000US-0214886.
PR 30-JUN-2000; 2000US-0215135.
PR 07-JUL-2000; 2000US-0216647.
PR 07-JUL-2000; 2000US-0216880.
PR 11-JUL-2000; 2000US-0217487.
PR 14-JUL-2000; 2000US-0218290.
PR 26-JUL-2000; 2000US-0220963.
PR 26-JUL-2000; 2000US-0220964.
PR 14-AUG-2000; 2000US-0224518.
PR 14-AUG-2000; 2000US-0224519.
PR 14-AUG-2000; 2000US-0225213.
PR 14-AUG-2000; 2000US-0225214.
PR 14-AUG-2000; 2000US-0225266.
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PR 14-AUG-2000; 2000US-0225268.
PR 14-AUG-2000; 2000US-0225270.
PR 14-AUG-2000; 2000US-0225447.
PR 14-AUG-2000; 2000US-0225757.
PR 14-AUG-2000; 2000US-0225758.
PR 14-AUG-2000; 2000US-0225759.
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PR 22-AUG-2000; 2000US-0226681.
PR 22-AUG-2000; 2000US-0226686.
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PR 23-AUG-2000; 2000US-0227009.
PR 30-AUG-2000; 2000US-0228924.
PR 01-SEP-2000; 2000US-0229287.
PR 01-SEP-2000; 2000US-0229343.
PR 01-SEP-2000; 2000US-0229344.
PR 01-SEP-2000; 2000US-0229345.
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PR 08-SEP-2000; 2000US-0231242.
PR 08-SEP-2000; 2000US-0231243.
PR 08-SEP-2000; 2000US-0231244.
PR 08-SEP-2000; 2000US-0231413.
PR 08-SEP-2000; 2000US-0231414.
PR 08-SEP-2000; 2000US-0232080.
PR 08-SEP-2000; 2000US-0232081.
PR 12-SEP-2000; 2000US-0231968.
PR 14-SEP-2000; 2000US-0232397.
PR 14-SEP-2000; 2000US-0232398.
PR 14-SEP-2000; 2000US-0232399.
PR 14-SEP-2000; 2000US-0232400.
PR 14-SEP-2000; 2000US-0232401.
PR 14-SEP-2000; 2000US-0233063.

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PR 14-SEP-2000; 2000US-0233064.
PR 14-SEP-2000; 2000US-0233065.
PR 21-SEP-2000; 2000US-0234223.
PR 21-SEP-2000; 2000US-0234223.
PR 21-SEP-2000; 2000US-0234274.
PR 25-SEP-2000; 2000US-0234957.
PR 25-SEP-2000; 2000US-0234998.
PR 26-SEP-2000; 2000US-0235484.
PR 27-SEP-2000; 2000US-0235834.
PR 27-SEP-2000; 2000US-0235836.
PR 29-SEP-2000; 2000US-0236327.
PR 29-SEP-2000; 2000US-0236367.
PR 29-SEP-2000; 2000US-0236368.
PR 29-SEP-2000; 2000US-0236369.
PR 29-SEP-2000; 2000US-0236370.
PR 02-OCT-2000; 2000US-0236802.
PR 02-OCT-2000; 2000US-0237037.
PR 02-OCT-2000; 2000US-0237038.
PR 02-OCT-2000; 2000US-0237039.
PR 02-OCT-2000; 2000US-0237039.
PR 02-OCT-2000; 2000US-0237040.
PR 13-OCT-2000; 2000US-0239935.
PR 13-OCT-2000; 2000US-0239937.
PR 20-OCT-2000; 2000US-0240960.
PR 20-OCT-2000; 2000US-0241221.
PR 20-OCT-2000; 2000US-0241785.
PR 20-OCT-2000; 2000US-0241786.
PR 20-OCT-2000; 2000US-0241787.
PR 20-OCT-2000; 2000US-0241808.
PR 20-OCT-2000; 2000US-0241809.
PR 20-OCT-2000; 2000US-0241809.
PR 01-NOV-2000; 2000US-0244617.
PR 08-NOV-2000; 2000US-0246474.
PR 08-NOV-2000; 2000US-0246475.
PR 08-NOV-2000; 2000US-0246475.
PR 08-NOV-2000; 2000US-0246476.
PR 08-NOV-2000; 2000US-0246477.
PR 08-NOV-2000; 2000US-0246478.
PR 08-NOV-2000; 2000US-0246523.
PR 08-NOV-2000; 2000US-0246524.
PR 08-NOV-2000; 2000US-0246525.
PR 08-NOV-2000; 2000US-0246526.
PR 08-NOV-2000; 2000US-0246527.
PR 08-NOV-2000; 2000US-0246528.
PR 08-NOV-2000; 2000US-0246532.
PR 08-NOV-2000; 2000US-0246609.
PR 08-NOV-2000; 2000US-0246610.
PR 08-NOV-2000; 2000US-0246611.
PR 08-NOV-2000; 2000US-0246613.
PR 17-NOV-2000; 2000US-0249207.
PR 17-NOV-2000; 2000US-0249208.
PR 17-NOV-2000; 2000US-0249209.
PR 17-NOV-2000; 2000US-0249210.
PR 17-NOV-2000; 2000US-0249211.
PR 17-NOV-2000; 2000US-0249212.
PR 17-NOV-2000; 2000US-0249213.
PR 17-NOV-2000; 2000US-0249214.
PR 17-NOV-2000; 2000US-0249215.
PR 17-NOV-2000; 2000US-0249216.
PR 17-NOV-2000; 2000US-0249217.
PR 17-NOV-2000; 2000US-0249218.
PR 17-NOV-2000; 2000US-0249244.
PR 17-NOV-2000; 2000US-0249245.
PR 17-NOV-2000; 2000US-0249264.
PR 17-NOV-2000; 2000US-0249265.
PR 17-NOV-2000; 2000US-0249297.
PR 17-NOV-2000; 2000US-0249299.
PR 17-NOV-2000; 2000US-0249300.
PR 01-DEC-2000; 2000US-0250160.
PR 01-DEC-2000; 2000US-0250391.
PR 05-DEC-2000; 2000US-0251030.
PR 05-DEC-2000; 2000US-0251988.
PR 05-DEC-2000; 2000US-0256719.
PR 06-DEC-2000; 2000US-0251479.
PR 08-DEC-2000; 2000US-0251856.
PR 08-DEC-2000; 2000US-0251868.
PR 08-DEC-2000; 2000US-0251869.
PR 08-DEC-2000; 2000US-0251989.
PR 11-DEC-2000; 2000US-0254097.
PR 05-JAN-2001; 2001US-02559678.
XX (HUMA-) HUMAN GENOME SCI INC.
PA
XX Rosen CA, Barash SC, Ruben SM;
XX
XX WPI; 2001-483426/52.
DR N-PSDB; AAK56413.
XX
XX Nucleic acids encoding human immune/hematopoietic antigen polypeptides,
PT useful for preventing, diagnosing and/or treating cancers and
PT metastasis.
XX
XX Claim 11: SEQ ID NO 11225; 3071pp + Sequence Listing; English.
XX
XX AAK54951 to AAK64702 encode the human immune/hematopoietic antigen (I)
CC amino acid sequences given in AAK82170 to AAK91921. (I) have cytostatic
CC activity, and can be used in gene therapy and vaccine production. (I)
CC proteins and polynucleotides may be used in the prevention, diagnosis and
CC treatment of diseases associated with inappropriate (I) expression. For
CC example, they may be used to treat disorders associated with decreased
CC expression by rectifying mutations or deletions in a patient's genome
CC that affect the activity of (I) by expressing inactive proteins or to
CC supplement the patients own production of (I). Additionally, (I)
CC polynucleotides may be used to produce the secreted (I), by inserting
CC the nucleic acids into a host cell and culturing the cell to express the
CC protein. (I) proteins and polynucleotides may be used to prevent,
CC diagnose and treat immune/hematopoietic-related diseases, especially
CC cancers and cancer metastases of haematopoietic-derived cells. AAK64703
CC to AAK87694 represent human immune/hematopoietic antigen genomic
CC sequences from the present invention. AAK54942 to AAK54950 and AAK82169
CC represent sequences used in the exemplification of the present invention.
XX
SQ Sequence 87 AA;
Query Match 71.7%; Score 33; DB 22; Length 87;
Best Local Similarity 71.4%; Pred. No. 96;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;
QY 2 KLCHQKK 8
Db 76 QLCHKKK 82
:|:|:|
RESULT 14
AAAG78167
ID AAG78167 standard; Protein; 112 AA.
XX
AC AAG78167;
XX
XX 04-DEC-2001 (first entry)
XX Human phosphatidic acid phosphatase 2-12.
XX
XX Human; phosphatidic acid phosphatase 2-12; cytostatic; virucidal;
KW immunomodulatory; antiinflammatory; haemostatic; malignant tumour;
KW human immunodeficiency virus; HIV; infection; immunological disease;
KW gene therapy.
XX
XX Homo sapiens.
XX
XX WO200173055-A1.
XX
XX 04-OCT-2001.
XX
XX 26-MAR-2001; 2001WO-CN00478.
XX
XX 28-MAR-2000; 2000CN-0115197.
XX
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PA (SHAN-) SHANGHAI BIOWINDOW GENE DEV INC.

XX Mao Y, Xie Y;

XX WPI: 2001-597124/67.

DR N-PSDB: AAI64606.

XX Human phosphatidic acid phosphatase 2-12 and encoded polynucleotide,
XX used in diagnosis and treatment of malignant tumours, haemopathy, human
XX immunodeficiency virus infection, immunological diseases and
XX inflammation -

PS Claim 1: Page 31; 35pp; Chinese.

XX The invention relates to the human phosphatidic acid phosphatase 2-12
XX with cytostatic, virucidal, immunomodulatory, antiinflammatory and
XX haemostatic activity. The protein and encoding polynucleotide are used in
XX diagnosis and treatment of malignant tumour, haemopathy, human
XX immunodeficiency virus (HIV) infection, immunological diseases and
XX various inflammations. The polynucleotide is useful in gene therapy.

XX Sequence 112 AA;

Query Match 71.7%; Score 33; DB 22; Length 112;

Best Local Similarity 50.0%; Pred. No. 1.2e+02;

Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 OKLCHQKK 8

:|:|:|:

Db 91 EKICHKEK 98

RESULT 15

ABG22874

ID ABG22874 standard; Protein; 196 AA.

XX AC

AC

XX DT

XX 18-FEB-2002 (first entry)

XX Novel human diagnostic protein #22865.

DE Human: chromosome mapping; gene mapping; gene therapy; forensic;
KW food supplement; medical imaging; diagnostic; genetic disorder.

XX Homo sapiens.

XX WO200175067-A2.

XX 11-OCT-2001.

XX 30-MAR-2001; 2001WO-US08631.

XX 31-MAR-2000; 2000US-0540217.

PR 23-AUG-2000; 2000US-0649167.

XX (HYSE-) HYSEQ INC.

XX Drmanac RT, Liu C, Tang YT;

XX WPI: 2001-639362/73.

DR N-PSDB: AAS87061.

XX New isolated polynucleotide and encoded polypeptides, useful in
PT diagnostics, forensics, gene mapping, identification of mutations
PT responsible for genetic disorders or other traits and to assess
PT biodiversity -

XX Claim 20; SEQ ID NO 53233; 103pp; English.

PS The invention relates to isolated polynucleotide (I) and

XX polypeptide (II) sequences. (I) is useful as hybridisation probes,

CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome

CC and gene mapping, and in recombinant production of (II). The
CC polynucleotides are also used in diagnostics as expressed sequence tags
CC for identifying expressed genes. (I) is useful in gene therapy techniques
CC to restore normal activity of (II) or to treat disease states involving
CC (II). (II) is useful for generating antibodies against it, detecting or
CC quantitating a polypeptide in tissue, as molecular weight markers and as
CC a food supplement. (II) and its binding partners are useful in medical
CC imaging of sites expressing (II). (I) and (II) are useful for treating
CC disorders involving aberrant protein expression or biological activity.
CC The polypeptide and polynucleotide sequences have applications in
CC diagnostics, forensics, gene mapping, identification of mutations
CC responsible for genetic disorders or other traits to assess biodiversity
CC and to produce other types of data and products dependent on DNA and
CC amino acid sequences. ABG00010-ABG30377 represent novel human
CC diagnostic amino acid sequences of the invention.
CC Note: The sequence data for this patent did not appear in the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX Sequence 196 AA;

Query Match 71.7%; Score 33; DB 22; Length 196;

Best Local Similarity 83.3%; Pred. No. 2e+02;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 OKLCHQ 6

Db 2 QKVCHQ 7

Search completed: November 1, 2002, 14:47:08

Job time : 3.8135 secs

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:08 ; Search time 1.2717 Seconds
(without alignments)
952.238 Million cell updates/sec

Title: US-09-606-129a-34
Perfect score: 40
Sequence: 1 KKRILHC 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL_19:*
1: sp.archaea:*
2: sp.bacteria:*
3: sp.fungi:*
4: sp.human:*
5: sp.invertebrate:*
6: sp.mammal:*
7: sp.mhc:*
8: sp.organelle:*
9: sp.phage:*
10: sp.plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertibrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriaph:*
17: sp_cheap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query %	Match	Length	ID	Description
1	40	100.0	295	11	Q9CY64	Q9cy64 mus musculus
2	40	100.0	296	4	Q9BRW8	Q9brw8 homo sapien
3	40	100.0	296	4	Q96QL4	Q96ql4 homo sapien
4	40	100.0	303	11	Q9DD21	Q9dd21 mus musculus
5	38	95.0	512	10	Q9LML0	Q9lml0 arabidopsis
6	38	95.0	599	10	Q9FHV3	Q9fhv3 arabidopsis
7	38	95.0	633	10	Q49511	Q49511 arabidopsis
8	36	90.0	279	11	Q9QXV3	Q9qxv3 mus musculus
9	36	90.0	508	11	Q9D6S2	Q9d6s2 mus musculus
10	35	87.5	267	2	Q9AKS0	Q9aks0 pseudomonas
11	35	87.5	495	10	Q9ST63	Q9st63 solanum tub
12	35	87.5	499	10	Q941V1	Q941v1 oryza sativ
13	35	87.5	508	10	Q80874	Q80874 arabidopsis
14	34	85.0	106	5	Q9XZM5	Q9xzm5 leishmania
15	34	85.0	111	4	Q9H007	Q9h007 homo sapien
16	34	85.0	233	4	Q9UIJ2	Q9uij2 homo sapien

17	34	85.0	235	4	Q9P0U6	Q9p0u6 homo sapien
18	34	85.0	279	4	Q43658	Q43658 homo sapien
19	34	85.0	279	4	Q9HD98	Q9hd98 homo sapien
20	34	85.0	279	4	Q9UK52	Q9uk52 homo sapien
21	34	85.0	283	4	Q9HD99	Q9hd99 homo sapien
22	34	85.0	294	4	Q00532	Q00532 homo sapien
23	34	85.0	338	3	Q9CIL3	Q9cil3 neurospora
24	34	85.0	422	4	Q9UK53	Q9uk53 homo sapien
25	34	85.0	422	4	Q9UIJ4	Q9uij4 homo sapien
26	34	85.0	455	5	Q9VJ28	Q9vj28 drosophila
27	34	85.0	497	10	Q9C8V1	Q9c8v1 arabidopsis
28	33	82.5	137	4	Q9NSR1	Q9nsr1 homo sapien
29	33	82.5	398	5	Q9VT97	Q9vt97 drosophila
30	33	82.5	401	10	Q9M149	Q9m149 arabidopsis
31	33	82.5	431	10	Q04613	Q04613 arabidopsis
32	33	82.5	601	4	Q9BRB5	Q9brb5 homo sapien
33	33	82.5	879	13	Q90ZT8	Q90zt8 gallus gall
34	32	80.0	102	10	Q9S738	Q9s738 lycopersico
35	32	80.0	112	11	Q9D4I7	Q9d4i7 mus musculus
36	32	80.0	189	2	Q03949	Q03949 anabaena sp
37	32	80.0	193	11	Q9CX09	Q9cx09 mus musculus
38	32	80.0	428	10	Q9LH89	Q9lh89 arabidopsis
39	32	80.0	571	10	Q24022	Q24022 lycopersico
40	32	80.0	901	12	Q99H09	Q99h09 helicoverpa
41	32	80.0	901	12	Q91BX6	Q91bx6 helicoverpa
42	32	80.0	978	5	Q9U6W5	Q9u6w5 caenorhabdi
43	32	80.0	1257	10	Q64516	Q64516 arabidopsis
44	31	77.5	42	2	Q9R730	Q9r730 xanthomonas
45	31	77.5	42	8	Q32948	Q32948 pinus thunb

ALIGNMENTS

RESULT 1

Q9CY64 ID Q9CY64 PRELIMINARY; PRT; 295 AA.
AC Q9CY64;
DT 01-JUN-2001 (Tremblrel. 17, Created)
DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)
DT 01-JUN-2001 (Tremblrel. 17, Last annotation update)
DE 2500001N03RIK PROTEIN.
GN 2500001N03RIK.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC SPRAIN=C57BL/6J; TISSUE=EMBRYONIC LIVER;
RX MEDLINE=21085660; PubMed=11217851;
RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Alizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bull C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mezzarelli J., Mombaerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashizaki Y.;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL; AK010847; BAB2719.1; -;
DR MGI; MGI:1917355; 2500001N03RIK.

DR InterPro: IPR000683; GFO_IDH_MoCA.
DR Pfam: PF01408; GFO_IDH_MoCA; 1.
SQ SEQUENCE 295 AA; 33524 MW; F2E1682BD77032A4 CRC64;

Query Match 100.0%; Score 40; DB 11; Length 295;
Best Local Similarity 100.0%; Pred. No. 1;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

|||||

Db 274 KKRILHC 280

RESULT 2

Q9BRW8 PRELIMINARY; PRT; 296 AA.

AC Q9BRW8; 17, Created)

DT 01-JUN-2001 (TEMBLrel. 17, Last sequence update)

DT 01-JUN-2001 (TEMBLrel. 19, Last annotation update)

DE STIMUL TO BILIVERDIN REDUCTASE A.

OS Homo sapiens (Human)

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.

OX NCBI_TaxID=9606;

RN [1]

RP SEQUENCE FROM N.A.

RC TISSUE=BRAIN, PRIMITIVE NEUROECTODERMAL;

RA Strausberg R.; 2001) to the EMBL/GenBank/DBJ databases.

RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.

DR EMBL; BC005902; AAH05902.1; -.

DR InterPro: IPR000683; GFO_IDH_MoCA.

DR Pfam: PF01408; GFO_IDH_MoCA; 1.

SQ SEQUENCE 296 AA; 33432 MW; A389AFDDDB6ADBABF CRC64;

Query Match 100.0%; Score 40; DB 4; Length 296;

Best Local Similarity 100.0%; Pred. No. 1;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

|||||

Db 275 KKRILHC 281

RESULT 3

Q96QL4 PRELIMINARY; PRT; 296 AA.

AC Q96QL4; 19, Created)

DT 01-DEC-2001 (TEMBLrel. 19, Last sequence update)

DT 01-DEC-2001 (TEMBLrel. 19, Last annotation update)

DE UNKNOWN (PROTEIN FOR MGC:14706).

OS Homo sapiens (Human)

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.

OX NCBI_TaxID=9606;

RN [1]

RP SEQUENCE FROM N.A.

RC TISSUE=PROSTATE;

RA Strausberg R.; 2001) to the EMBL/GenBank/DBJ databases.

RL Submitted (MAY-2001) to the EMBL/GenBank/DBJ databases.

DR EMBL; BC008456; AAH08456.1; -.

SQ SEQUENCE 296 AA; 33428 MW; 2CF2AA7F1CDDDB707 CRC64;

Query Match 100.0%; Score 40; DB 4; Length 296;

Best Local Similarity 100.0%; Pred. No. 1;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

|||||

Db 275 KKRILHC 281

RESULT 4

Q9DD21

ID Q9DD21 PRELIMINARY; PRT; 303 AA.

AC Q9DD21; 17, Created)

DT 01-JUN-2001 (TEMBLrel. 17, Last sequence update)

DT 01-JUN-2001 (TEMBLrel. 17, Last annotation update)

DE 0610006A1LRK PROTEIN.

GN 0610006A1LRK.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OX NCBI_TaxID=10090;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=C57BL/6J; TISSUE=KIDNEY;

RX MEDLINE=21085660; PubMed=11217851;

RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

RA Fletschmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,

RA Kuehl P., Lewis S., Matsuura Y., Nikaide I., Pesole G., Quackenbush J.,

RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,

RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,

RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohsaki S.,

RA Hayashizaki Y.;

RT "Functional annotation of a full-length mouse cDNA collection.";

RL Nature 409:685-690(2001).

DR EMBL; AK002231; BAB21950.1; -.

DR MGD; MGI:1915580; 0610006A1LRK.

DR InterPro: IPR000683; GFO_IDH_MoCA.

DR Pfam: PF01408; GFO_IDH_MoCA; 1.

SQ SEQUENCE 303 AA; 34491 MW; 52D8A3B02BE956EB CRC64;

Query Match 100.0%; Score 40; DB 11; Length 303;

Best Local Similarity 100.0%; Pred. No. 1;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

|||||

Db 274 KKRILHC 280

RESULT 5

Q9LML0

ID Q9LML0 PRELIMINARY; PRT; 512 AA.

AC Q9LML0; 15, Created)

DT 01-OCT-2000 (TEMBLrel. 15, Last sequence update)

DT 01-OCT-2000 (TEMBLrel. 15, Last annotation update)

DE F10K1.11 PROTEIN.

GN F10K1.11.

OS Arabidopsis thaliana (Mouse-ear cress).

OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;

OC eurosids II; Brassicales; Brassicaceae; Arabidopsi.

OX NCBI_TaxID=3702;

RN [1]

RP SEQUENCE FROM N.A.

RA Liu S.X., Chan A., Yu G., Etgu P., Lee J.M., Lenz C., Pham P.,

RA Sakano H., Toriumi M., Chung M., Goldsmith A., Liu A., Liu A.,

RA Sayberg M., Altati H., Brooks S., Buehler E., Chao Q., Conn L.,

RA Conway A., Hansen N., Johnson-Hopson C., Khan S., Kim C., Lam B.,

RA Miranda M., Nguyen M., Palm C.J., Shinn P., Southwick A., Davis R.W.,

RA Ecker J.R., Federspiel N.A., Theologis A.;
 RT "The sequence of BAC F10K1 from Arabidopsis thaliana chromosome 1.";
 RL Submitted (JAN-2001) to the EMBL/GenBank/DBJ databases.
 CC -1- COFACTOR: FAD (BY SIMILARITY).
 DR EMBL: AC067971; AAF82202.1; -;
 DR InterPro: IPR001327; FAD_pyr_redox.
 DR Pfam: PF00070; pyr_redox; 1.
 KW FAD; Flavoprotein; Oxidoreductase.
 SQ SEQUENCE 512 AA; 56857 MW; 1F63AFA9A1A2C13B CRC64;

Query Match 95.0%; Score 38; DB 10; Length 512;
 Best Local Similarity 85.7%; Pred. No. 4.4;
 Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRLLHC 7
 |||||
 Db 236 KKRLLHC 242

RESULT 6
 Q9FHV3 PRELIMINARY; PRT; 599 AA.
 ID Q9FHV3
 AC Q9FHV3
 DT 01-MAR-2001 (TrEMBLrel. 16, Created)
 DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
 DT 01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
 DE MUTATOR-LIKE TRANSPOSASE-LIKE PROTEIN.
 OS Arabidopsis thaliana (Mouse-ear cress).
 OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
 OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
 OC eurosids II; Brassicales; Brassicaceae; Arabidopsids.
 OX NCBI_TaxID=3702;
 [1]
 RN SEQUENCE FROM N.A.
 RC STRAIN=COLUMBIA;
 RX MEDLINE=99397451; PubMed=10470850;
 RA Kaneko T., Katoh T., Sato S., Nakamura Y., Asamizu E., Kotani H.,
 RA Miyajima N., Tabata S.;
 RT "Structural analysis of Arabidopsis thaliana chromosome 5. IX.
 RT PI and TAC clones.";
 RL DNA Res. 6:183-195(1999).
 DR EMBL: AB017068; BAB11366.1; -;
 SQ SEQUENCE 599 AA; 69407 MW; 36BAEE2F2A82D717 CRC64;

Query Match 95.0%; Score 38; DB 10; Length 599;
 Best Local Similarity 85.7%; Pred. No. 5.1;
 Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRLLHC 7
 |||||
 Db 563 KKRIMHC 569

RESULT 7
 Q49511 PRELIMINARY; PRT; 633 AA.
 ID Q49511
 AC Q49511
 DT 01-JUN-1998 (TrEMBLrel. 06, Created)
 DT 01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
 DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
 DE MUDR TRANSPOSABLE ELEMENT - LIKE PROTEIN (MUDR TRANSPOSABLE ELEMENT-LIKE PROTEIN).
 DE F28J12.70 OR AT4G18410.
 GN F28J12.70 OR AT4G18410.
 OS Arabidopsis thaliana (Mouse-ear cress).
 OC Eukaryota; Viridiplantae; Streptophyta; Tracheophyta;
 OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
 OC eurosids II; Brassicales; Brassicaceae; Arabidopsids.
 OX NCBI_TaxID=3702;
 [1]
 RN SEQUENCE FROM N.A.
 RA Bevan M., Hilbert H., Braun M., Holzer E., Brandt A., Duesterhoeft A.,
 RA Bancroft I., Mewes H.W., Mayer K., Schueller C.;

RL Submitted (FEB-1998) to the EMBL/GenBank/DBJ databases.
 [2]
 RN SEQUENCE FROM N.A.
 RA Hilbert H., Braun M., Holzer E., Brandt A., Duesterhoeft A.,
 RA Mewes H.W., Lemcke K., Mayer K.F.X.;
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 [3]
 RN SEQUENCE FROM N.A.
 RA EU Arabidopsis sequencing project;
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL: AL021710; CAA16721.1; -;
 DR EMBL: AL161548; CAB78843.1; -;
 DR InterPro: IPR004332; MUDR.
 DR Pfam: PF03108; MUDR; 1.
 SQ SEQUENCE 633 AA; 72930 MW; 3FC298BF2218C623 CRC64;

Query Match 95.0%; Score 38; DB 10; Length 633;
 Best Local Similarity 85.7%; Pred. No. 5.4;
 Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRLLHC 7
 |||||
 Db 591 KKRIMHC 597

RESULT 8
 Q9QXV3 PRELIMINARY; PRT; 279 AA.
 ID Q9QXV3
 AC Q9QXV3; Q9QXV4; Q9QUP8; Q9QXV3;
 DT 01-MAY-2000 (TrEMBLrel. 13, Created)
 DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
 DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
 DE ING1 PROTEIN.
 GN ING1.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 [1]
 RN SEQUENCE FROM N.A., AND CHARACTERIZATION.
 RC STRAIN=129/SVJ; TISSUE=BRAIN, EMBRYONIC FIBROBLAST, AND SPLEEN;
 RX MEDLINE=20011419; PubMed=10542234;
 RA Zereniski M., Hill J.E., Kwek S.S.S., Grigorian I.A., Gurov K.V.,
 RA Garkavtsev I.V., Diatchenko L., Koonin E.V., Gudkov A.V.;
 RT "Structure and regulation of the mouse ing1 gene. Three alternative
 RT transcripts encode two PHD finger proteins that have opposite effects
 RT on p53 function.";
 RL J. Biol. Chem. 274:32172-32181(1999).
 [2]
 RN SEQUENCE FROM N.A. (ISOFORM 1).
 RP Rancourt D., Garkavtsev I.;
 RA "Structural organization and expression pattern of the murine ING1
 RT gene.";
 RL Submitted (MAY-1999) to the EMBL/GenBank/DBJ databases.
 [3]
 RN SEQUENCE FROM N.A. (ISOFORM 1).
 RP TISSUE-BREAST TUMOR;
 RC Strausberg R.;
 RL Submitted (OCT-2001) to the EMBL/GenBank/DBJ databases.
 CC -1- FUNCTION: ISOFORM 1 INHIBITS P53-DEPENDENT TRANSCRIPTIONAL
 CC ACTIVATION AND MAY FUNCTION AS AN ONCOPROTEIN. ISOFORM 2 ACTS AS A
 CC NEGATIVE GROWTH REGULATOR BY COOPERATING WITH P53 IN
 CC TRANSCRIPTIONAL ACTIVATION OF P53-RESPONSIVE GENES AND MAY ACT AS
 CC A TUMOR SUPPRESSOR.
 CC -1- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
 CC -1- ALTERNATIVE PRODUCTS: 2 ISOFORMS; 1 (SHOWN HERE) AND 2; ARE
 CC PRODUCED BY ALTERNATIVE SPLICING.
 CC -1- TISSUE SPECIFICITY: IN THE ADULT, WIDELY EXPRESSED WITH HIGHEST
 CC LEVELS IN THYMUS AND TESTIS. EXPRESSED THROUGHOUT THE WHOLE EMBRYO
 CC AT ALL STAGES OF DEVELOPMENT EXAMINED. AT DAY 10, HIGHEST
 CC EXPRESSION IS FOUND IN THE YOLK SAC WHILE AT DAY 16 AND 18, HIGHER
 CC LEVELS ARE FOUND IN INNER COMPARTMENTS OF BONE.
 CC -1- DEVELOPMENTAL STAGE: IN THE EMBRYO, HIGHEST EXPRESSION OF ISOFORM

CC 1 IS FOUND AT DAY 11 WHILE HIGHEST EXPRESSION OF ISOFORM 2 IS
CC FOUND AT DAY 7.

CC -1- SIMILARITY: CONTAINS 1 PHD-FINGER DOMAIN.

DR EMBL: AF177753; AAF16911.1; -

DR EMBL: AF177755; AAF16908.1; -

DR EMBL: AF177756; AAF16909.1; -

DR EMBL: AF177757; AAF16910.1; -

DR EMBL: AF149820; AAF09183.1; -

DR EMBL: BC016573; AAH16573.1; -

DR MGD: MGI:1349481; Ingi

DR InterPro: IPR001965; PHD.

DR Pfam: PF00628; PHD; 1.

DR SMART: SM00249; PHD; 1.

KW Oncogene: Anti-oncogene; Alternative splicing.

FT DOMAIN 210 259 PHD-FINGER.

FT VARSPLIC 1 94 MISSING (IN ISOFORM 2).

FT CONFLICT 203 203 L -> F (IN REF. 2).

SQ SEQUENCE 279 AA; 33109 MW; 6765C984EEF179F4 CRC64;

Query Match 90.0%; Score 36; DB 11; Length 279;

Best Local Similarity 71.4%; Pred. No. 6.8;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

Db 67 KRRVLC 73

RESULT 9

Q9D6S2

ID Q9D6S2 PRELIMINARY; PRT; 508 AA.

AC Q9D6S2;

DT 01-JUN-2001 (TREMBLrel. 17, Created)

DT 01-JUN-2001 (TREMBLrel. 17, Last sequence update)

DT 01-JUN-2001 (TREMBLrel. 17, Last annotation update)

DE 2-5' OLIGOADENYLATE SYNTHETASE-LIKE.

GN OASL.

OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OX NCBI_TaxID=10090;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=C57BL/6J; TISSUE=TONGUE;

RX MEDLINE=21085660; PubMed=11217851;

RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,

Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,

Kuehl P., Lewis S., Matsuo Y., Nikaide I., Pesole G., Quackenbush J.,

Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,

Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,

Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,

Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,

Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawai H., Kohtsuki S.,

Hayashizaki Y.

"Functional annotation of a full-length mouse cDNA collection.";

RL Nature 409:685-690(2001).

DR EMBL: AK010034; BAB2655.1; -

DR MGD: MGI:1344390; Oasl.

DR InterPro: IPR001797; 25A_synth.

DR InterPro: IPR001201; PAP_25A.core.

DR Pfam: PF00240; ubiquitin; Ubiquitin.

DR SMART: SM00213; UHQ; 1.

DR PROSITE: PS00833; 25A_SYNTH_2; UNKNOWN_1.

DR PROSITE: PSS0152; 25A_SYNTH_3; 1.

DR PROSITE: PSS0053; UBIQUITIN_2; 1.

SQ SEQUENCE 508 AA; 58767 MW; 9552B4540CC801A0 CRC64;

Query Match 90.0%; Score 36; DB 11; Length 508;

Best Local Similarity 71.4%; Pred. No. 12;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

Db 109 KKRILHC 115

RESULT 10

Q9AKS0

ID Q9AKS0 PRELIMINARY; PRT; 267 AA.

AC Q9AKS0;

DT 01-JUN-2001 (TREMBLrel. 17, Created)

DT 01-JUN-2001 (TREMBLrel. 17, Last sequence update)

DT 01-OCT-2001 (TREMBLrel. 18, Last annotation update)

DE TATC PROTEIN.

GN TATC.

OS Pseudomonas stutzeri (Pseudomonas perfectomarina).

OC Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;

OC Pseudomonas.

OX NCBI_TaxID=316;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=ZOBELL ATCC14405;

RX MEDLINE=21101859; PubMed=11160097;

RA Heikilla M.P., Honisch U., Wunsch P., Wunf W.G.;

"Role of the Tat transport system in nitrous oxide reductase

translocation and cytochrome cdl biosynthesis in Pseudomonas

stutzeri.";

RL J. Bacteriol. 183:1663-1671(2001).

DR EMBL: AJ299712; CAC29149.1; -

DR InterPro: IPR002033; UPF0032.

DR Pfam: PF00902; UPF0032; 1.

DR PROSITE: PS01218; UPF0032; 1.

SQ SEQUENCE 267 AA; 29439 MW; 4369E5E38BCD736 CRC64;

Query Match 87.5%; Score 35; DB 2; Length 267;

Best Local Similarity 71.4%; Pred. No. 11;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

Db 21 KKRILHC 27

RESULT 11

Q9ST63

ID Q9ST63 PRELIMINARY; PRT; 495 AA.

AC Q9ST63;

DT 01-MAY-2000 (TREMBLrel. 13, Created)

DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)

DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)

DE PUTATIVE INTERNAL ROTENONE-INSENSITIVE NADH DEHYDROGENASE.

GN NDAL.

OS Solanum tuberosum (Potato).

OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;

OC Asteridae; euasterids I; Solanales; Solanaceae; Solanum.

OX NCBI_TaxID=4113;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=CV. DESIREE; TISSUE=LEAF;

RX MEDLINE=20040052; PubMed=10571867;

RA Rasmussen A.G., Svensson A., Knoop V., Grohmann L., Brennicke A.;

"Homologues of yeast and bacterial rotenone-insensitive NADH

dehydrogenases in higher eukaryotes: two enzymes are present in potato

mitochondria.";

RL Plant J. 20:79-87(1999).

CC -I- COFACTOR: FAD (BY SIMILARITY).
 DR EMBL: AJ245861; CAB52796.1; -.
 DR InterPro: IPR001327; FAD_pyr_redox.
 DR Pfam: PF00070; pyr_redox.1
 KW FAD; Flavoprotein; NAD; Oxidoreductase.
 SQ SEQUENCE 495 AA; 54902 MW; 6AFFC807BEB01340 CRC64;

Query Match 87.5%; Score 35; DB 10; Length 495;
 Best Local Similarity 71.4%; Pred. No. 19;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
 |:|:|
 Db 224 KRRLHC 230

RESULT 12

Q941V1 ID Q941V1 PRELIMINARY; PRT; 499 AA.

AC Q941V1;
 DT 01-DEC-2001 (TrEMBLrel. 19, Created)
 DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
 DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
 DE PUTATIVE NADH DEHYDROGENASE.
 GN B1088C09.27.

OS Oryza sativa (Rice).
 OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
 OC Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
 OC Ehrhartoidae; Oryzaceae; Oryza.
 OX NCBI_TaxID=4530;
 [1]

RP SEQUENCE FROM N.A.
 RC STRAIN=CV. NIPPONBARE;
 RA Sasaki T., Matsumoto T., Yamamoto K.;
 RT "Oryza sativa nipponbare(GA3) genomic DNA, chromosome 1, BAC
 clone:B1088C09.";
 RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.
 DR EMBL: AP003734; BAB68119.1; -.
 SQ SEQUENCE 499 AA; 54687 MW; AF4337AB3F9363D4 CRC64;

Query Match 87.5%; Score 35; DB 10; Length 499;
 Best Local Similarity 71.4%; Pred. No. 19;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
 |:|:|
 Db 227 KRRLHC 233

RESULT 13

O80874 ID O80874 PRELIMINARY; PRT; 508 AA.

AC O80874;
 DT 01-NOV-1998 (TrEMBLrel. 08, Created)
 DT 01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
 DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
 DE PUTATIVE NADH DEHYDROGENASE (UBIQUINONE OXIDOREDUCTASE).
 GN AT2G29990.

OS Arabidopsis thaliana (Mouse-ear cress).
 OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
 OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
 OC eurosids II; Brassicales; Brassicaceae; Arabidopsis.
 OX NCBI_TaxID=3702;
 [1]

RP SEQUENCE FROM N.A.
 RC STRAIN=CV. COLUMBIA;
 RX MEDLINE=20083487; PubMed=10617197;
 RA Lin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D.,
 Fujii C.Y., Mason T.M., Bowman C.L., Barnstead M.E., Feldblum T.V.,
 Buell C.R., Ketchum K.A., Lee J.J., Ronning C.M., Koo H., Moffat K.S.,
 Cronin L.A., Shen M., VanAken S.E., Umeyan L., Tallon L.J., Gili J.E.,
 Adams M.D., Carrera A.J., Creasy T.H., Goodman H.M., Somerville C.R.,
 Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A.,

RA Salzberg S.L., Fraser C.M., Venter J.C.;
 RT "Sequence and analysis of chromosome 2 of the plant Arabidopsis
 thaliana.";
 RL Nature 402:761-768(1999).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC STRAIN=CV. COLUMBIA;
 RA Lin X.;
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 CC -I- COFACTOR: FAD (BY SIMILARITY).
 DR EMBL: AC004680; AAC31853.1; -.
 DR InterPro: IPR001327; FAD_pyr_redox.
 DR Pfam: PF00070; pyr_redox.1.
 KW FAD; Flavoprotein; Oxidoreductase; Ubiquinone.
 SQ SEQUENCE 508 AA; 56503 MW; 266A434E702A0C27 CRC64;

Query Match 87.5%; Score 35; DB 10; Length 508;
 Best Local Similarity 71.4%; Pred. No. 19;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
 |:|:|
 Db 236 KRRLHC 242

RESULT 14

O9XZM5 ID O9XZM5 PRELIMINARY; PRT; 106 AA.

AC O9XZM5;
 DT 01-NOV-1999 (TrEMBLrel. 12, Created)
 DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
 DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
 DE RIBOSOMAL PROTEIN L44.
 GN RPL44.

OS Leishmania amazonensis.
 OC Eukaryota; Euklenozoa; Kinetoplastida; Trypanosomatidae; Leishmania.
 OX NCBI_TaxID=5659;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=LV78;

RA Porter-Kelley J., Chaudhuri G.;
 RT "Cloning and characterization of Leishmania ribosomal protein L44.";
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 CC -I- SIMILARITY: BELONGS TO THE L44E FAMILY OF RIBOSOMAL PROTEINS.
 DR EMBL: AF148853; AAD31928.2; -.
 DR InterPro: IPR000552; Ribosomal_L44E.
 DR Pfam: PF00935; Ribosomal_L44; 1.
 DR PRODOM: PD002841; Ribosomal_L44E; 1.
 DR PROSITE: PS01172; RIBOSOMAL_L44E; 1.
 KW Ribosomal protein.
 SQ SEQUENCE 106 AA; 12283 MW; F30A3AB2047B0334 CRC64;

Query Match 85.0%; Score 34; DB 5; Length 106;
 Best Local Similarity 57.1%; Pred. No. 7.6;
 Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
 |:|:|
 Db 6 KKVVMHC 12

RESULT 15

O9H007 ID O9H007 PRELIMINARY; PRT; 111 AA.

AC O9H007;
 DT 01-MAR-2001 (TrEMBLrel. 16, Created)
 DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
 DT 01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
 DE INGL ISOFORM (FRAGMENT).
 GN INGL.

OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

```
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=20322670; PubMed=10866301;
RA Mehmet G., Ouchida M., Fukushima K., Hanafusa H., Etani T.,
RA Nishioka S., Nishizaki K., Shimizu K.;
RT "Genomic Structure of the Human INGI Gene and Tumor-specific Mutations
RT Detected in Head and Neck Squamous Cell Carcinomas.";
RL Cancer Res. 60:3143-3146(2000).
DR EMBL: AB037594; BAE20992.1; -.
FT NON_TER 111 111
SQ SEQUENCE 111 AA; 12566 MW; 9C76D21C7E982313 CRC64;

Query Match      85.0%; Score 34; DB 4; Length 111;
Best Local Similarity 71.4%; Pred. No. 7.9;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

OY 1 KKRILHC 7
Db 50 KRRMLHC 56

Search completed: November 1, 2002, 14:49:50
Job time : 2.2717 secs
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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:41:32 ; Search time 0.360129 seconds
(without alignments)
752.611 Million cell updates/sec

Title: US-09-606-129A-34
Perfect score: 40
Sequence: 1 KKRILHC 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_40.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Match %	Query Length	DB ID	Description
1	40	100.0	296	1 BIEA_HUMAN	P53004 homo sapien
2	38	95.0	295	1 BIEA_RAT	P46844 rattus norv
3	36	90.0	473	1 OASL_MOUSE	Q922f2 mus musculu
4	33	82.5	528	1 DYR2_HUMAN	Q92630 homo sapien
5	32	80.0	571	1 AMPL_LYCES	Q10712 lycopersico
6	32	80.0	573	1 AMPL_SOLITU	P31427 solanum tub
7	32	80.0	925	1 PIP1_YEAST	P40020 saccharomyc
8	31	77.5	140	1 FKB2_MOUSE	P45878 mus musculu
9	31	77.5	141	1 FKB2_HUMAN	P26885 homo sapien
10	31	77.5	144	1 YHP5_YEAST	P38808 saccharomyc
11	31	77.5	257	1 YZG1_CAEEL	P55326 caenorhabdi
12	31	77.5	423	1 SHP1_YEAST	P34223 saccharomyc
13	31	77.5	451	1 SUN_HAEIN	P44788 haemophilus
14	31	77.5	560	1 YD2H_SCHPO	Q10264 schizosacch
15	31	77.5	670	1 REP_HAEIN	P44804 haemophilus
16	31	77.5	1059	1 CAPU_DROME	Q24120 drosophila
17	30	75.0	108	1 YZ09_METJA	O60271 methanococc
18	30	75.0	249	1 YAT6_RHOBL	P05449 rhodopsu
19	30	75.0	323	1 CYCH_XENLA	P51947 xenopus lae
20	30	75.0	428	1 DGTP_MYCSM	O52199 mycobacteri
21	30	75.0	459	1 NEK3_HUMAN	P51956 homo sapien
22	30	75.0	588	1 DYR3_HUMAN	O43781 homo sapien
23	30	75.0	1790	1 SEPA_EMENI	P78621 emericella
24	30	75.0	4128	1 PRKD_MOUSE	P97313 mus musculu
25	29	72.5	134	1 DC4C_ACICA	P20370 acinetobact
26	29	72.5	169	1 Y113_NPVAC	P41666 autographa
27	29	72.5	301	1 OTCA_VIBS2	P96172 vibrio sp.
28	29	72.5	320	1 MDH_RHILV	O33525 rhizobium l
29	29	72.5	320	1 MDH_RHIME	O9eyj6 rhizobium m
30	29	72.5	328	1 HYBA_ECOLI	P37179 escherichia
31	29	72.5	359	1 ODPE_RAT	P49432 rattus norv
32	29	72.5	377	1 CYC1_HUMAN	Q14094 homo sapien
33	29	72.5	377	1 CYC1_MOUSE	Q922v9 mus musculu

RESULT 1	BIEA_HUMAN	STANDARD;	PRT;	296 AA.
AC	P53004:			
DT	01-OCT-1996 (Rel. 34, Created)			
DT	01-OCT-1996 (Rel. 34, Last sequence update)			
DT	16-OCT-2001 (Rel. 40, Last annotation update)			
DE	Biliverdin reductase A precursor (EC 1.3.1.24) (Biliverdin-IX alpha-reductase).			
DE	reductase).			
GN	BLVRA OR BLVR OR BVR.			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=Placenta;			
RX	MEDLINE=96202961; PubMed=8631357;			
RA	Maines M.D., Pollevoda B.V., Huang T.-J., McCoubrey W.K. Jr.;			
RT	"Human biliverdin IXalpha reductase is a zinc-metalloprotein.			
RT	Characterization of purified and Escherichia coli expressed			
RT	enzymes".			
RL	Eur. J. Biochem. 235:372-381(1996).			
RN	[2]			
RP	SEQUENCE FROM N.A.			
RA	Komuro A., Tobe T., Nakano Y., Yamaguchi T., Tomita M.;			
RL	Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.			
RN	[3]			
RP	SEQUENCE OF 1-117 FROM N.A.			
RA	Cordes M., Wollam C., Carter T.;			
RL	Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.			
RN	[4]			
RP	SEQUENCE OF 3-36; 48-74 AND 228-248.			
RC	TISSUE=Liver;			
RX	MEDLINE=93143333; PubMed=8424666;			
RA	Maines M.D., Trakshel G.M.;			
RT	"Purification and characterization of human biliverdin reductase.";			
RL	Arch. Biochem. Biophys. 300:320-326(1993).			
RN	[5]			
RP	SEQUENCE OF 3-22.			
RC	TISSUE=Liver;			
RX	MEDLINE=95014177; PubMed=7929092;			
RA	Yamaguchi T., Komoda Y., Nakajima H.;			
RT	"Biliverdin-IX alpha reductase and biliverdin-IX beta reductase from			
RL	human liver. Purification and characterization.";			
RT	J. Biol. Chem. 269:24343-24348(1994).			
CC	- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN.			
CC	- CATALYTIC ACTIVITY: Bilirubin + NAD(P)(+) = biliverdin + NAD(P)H.			
CC	- COFACTOR: BINDS ONE ZINC ION. HAS DUAL PH/COFACTOR (NADH, NADPH)			
CC	- SPECIFICITY. USES NADH AT THE ACIDIC PH RANGE (6-6.7) AND NADPH AT			
CC	THE ALKALINE RANGE (8.5-8.7).			
CC	- PATHWAY: FINAL STEP IN HEME METABOLISM.			
CC	- SUBUNIT: MONOMER.			
CC	- SUBCELLULAR LOCATION: Cytoplasmic.			
CC	- TISSUE SPECIFICITY: LIVER.			
CC	- SIMILARITY: TO E.COLI YHHX.			

Q9x0x7 thermotoga
P25552 escherichia
P18140 tacaribe vi
P43704 haemophilus
O05542 gluconobact
P52468 human herpe
Q64347 mus musculu
P35524 rattus norv
O47077 enterobacte
O75643 homo sapien
P79114 bos taurus
Q9hd67 homo sapien

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DR EMBL: X93086; CAA63635.1; --
DR EMBL: U34877; AAC35588.1; --
DR EMBL: AC005189; AAC25526.1; --
DR MIM: 109750; --
DR InterPro: IPR000683; GFO_IDH_MOCA.
DR Pfam: PF01408; GFO_IDH_MOCA; 1.
KW Oxidoreductase; NAD; NADP; Zinc.
FT PROPEP 1 2
FT CHAIN 3 296 BILIVERDIN REDUCTASE A.
FT DOMAIN 11 16 POLY-VAL.
FT METAL 280 280 ZINC (POTENTIAL).
FT METAL 281 281 ZINC (POTENTIAL).
FT METAL 292 292 ZINC (POTENTIAL).
FT METAL 293 293 ZINC (POTENTIAL).
FT CONFLICT 3 3 A -> T (IN REF. 2).
FT CONFLICT 154 155 SD -> AG (IN REF. 2).
FT CONFLICT 160 160 D -> E (IN REF. 2).
SQ SEQUENCE 296 AA; 33488 MW; 0DFD3B386F4DFC0A CRC64;

Query Match 100.0%; Score 40; DB 1; Length 296;
Best Local Similarity 100.0%; Pred. No. 0.29;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
| | | | | | |
Db 275 KKRILHC 281

RESULT 2
BIEA_RAT
ID BIEA_RAT STANDARD; PRT; 295 AA.
AC P46844;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 15-JUL-1999 (Rel. 38, Last annotation update)
DE Biliverdin reductase A precursor (EC 1.3.1.24) (Biliverdin-IX alpha-
DE reductase).
GN BLVRA OR BLVR.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE=Kidney;
RX MEDLINE=92156147; PubMed=1371282;
RA Fakhrai H., Maines M.D.;
RT "Expression and characterization of a cDNA for rat kidney biliverdin
RT reductase. Evidence suggesting the liver and kidney enzymes are the
RT same transcript product.";
RT J. Biol. Chem. 267:4023-4029(1992).
RL [2]
RN MUTAGENESIS.
RX MEDLINE=94291657; PubMed=8020496;
RA McCoubrey W.K. Jr., Maines M.D.;
RT site-directed mutagenesis of cysteine residues in biliverdin
RT reductase. Roles in substrate and cofactor binding.";
RL Eur. J. Biochem. 222:597-603(1994).
CC -!- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN; DISPLAYS TWO DISTINCT
CC PH OPTIMA USING A DIFFERENT COFACTOR AT EACH PH: NADH AT THE LOWER
CC PH 6.7-6.9 RANGE AND NADPH AT PH 8.5-8.7. NADPH, HOWEVER, IS THE
CC PROBABLE COFACTOR IN BIOLOGICAL SYSTEMS.
CC -!- CATALYTIC ACTIVITY: Bilirubin + NAD(P)(+) = biliverdin + NAD(P)H.
CC -!- COFACTOR: BINDS ONE ZINC ION.

CC -!- PATHWAY: FINAL STEP IN HEME METABOLISM.
CC -!- SUBUNIT: MONOMER (BY SIMILARITY).
CC -!- SUBCELLULAR LOCATION: Cytoplasmic.
CC -!- SIMILARITY: TO E.COLI YHHX.

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CC or send an email to license@isb-sib.ch).

DR EMBL: M81681; AAA40830.1; --
DR InterPro: IPR000683; GFO_IDH_MOCA.
DR Pfam: PF01408; GFO_IDH_MOCA; 1.
KW Oxidoreductase; NAD; NADP; Zinc.
FT PROPEP 1 2
FT CHAIN 3 295 BILIVERDIN REDUCTASE A.
FT DOMAIN 11 16 POLY-VAL.
FT METAL 279 279 ZINC (POTENTIAL).
FT METAL 280 280 ZINC (POTENTIAL).
FT METAL 291 291 ZINC (POTENTIAL).
FT METAL 292 292 ZINC (POTENTIAL).
FT MUTAGEN 73 73 C->A: LOSS OF ACTIVITY.
FT MUTAGEN 280 280 C->A: REDUCED ACTIVITY.
FT MUTAGEN 291 291 C->A: REDUCED ACTIVITY.
SQ SEQUENCE 295 AA; 33565 MW; 219C8EA96C150588 CRC64;

Query Match 95.0%; Score 38; DB 1; Length 295;
Best Local Similarity 85.7%; Pred. No. 0.77;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
| | | | | | |
Db 274 KKRIMHC 280

RESULT 3
OASL_MOUSE
ID OASL_MOUSE STANDARD; PRT; 473 AA.
AC Q922F2;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE 54 kDa 2'-5'-oligoadenylate synthetase like protein (EC 2.7.7.-) (p54
DE OASL) (P54OASL) (M1204).
GN OASL.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Spleen;
RX MEDLINE=99323669; PubMed=10395668;
RA Tiefenthaler M., Marksteiner R., Neyer S., Koch F., Hofer S.,
RA Schuler G., Nussenzweig M., Schneider R., Heufler C.;
RT "M1204, a novel 2',5' oligoadenylate synthetase with a ubiquitin-like
RT extension, is induced during maturation of murine dendritic cells.";
RL J. Immunol. 163:760-765(1999).
CC -!- FUNCTION: MAY PLAY A ROLE IN MEDIATING RESISTANCE TO VIRUS
CC INFECTION, CONTROL OF CELL GROWTH, DIFFERENTIATION, AND APOPTOSIS.
CC -!- CATALYTIC ACTIVITY: BINDS DOUBLE-STRANDED RNA AND POLYMERIZES ATP
CC INTO PP(A2'P5'A)N OLIGOMERS, WHICH ACTIVATE THE LATENT RNASE L
CC THAT, WHEN ACTIVATED, CLEAVES SINGLE-STRANDED RNAs.
CC -!- TISSUE SPECIFICITY: STRONGLY EXPRESSED IN SPLEEN DENDRITIC CELLS,
CC WHEREAS, IN BONE MARROW-DERIVED DENDRITIC CELLS, THE AMOUNT
CC INCREASES DURING THE MATURATION PROCESS. EXPRESSED IN MANY ORGANS,
CC THE HIGHEST LEVELS BEING IN THYMUS, LUNG, AND BONE MARROW.
CC -!- SIMILARITY: BELONGS TO THE 2-5A SYNTHETASE FAMILY.
CC -!- SIMILARITY: CONTAINS 1 UBIQUITIN-LIKE DOMAIN.
CC -!- CAUTION: THIS MAY NOT BE THE TRUE ORTHOLOG OF HUMAN OASL.

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EMBL; AF068835; AAD02818.1; -
MGD; MGI:1344390; Oasi.
InterPro; IPR001797; 25A_synth.
InterPro; IPR001201; PAP_25A_core.
InterPro; IPR000626; Ubiquitin.
Pfam; PF00240; ubiquitin; 1.
PROSITE; PS00832; 25A_SYNTH_1; FALSE_NEG.
PROSITE; PS00833; 25A_SYNTH_2; 1.
PROSITE; PS0152; 25A_SYNTH_3; 1.
PROSITE; PS50053; UBIQUITIN_2; FALSE_NEG.
KW RNA-binding; Transferase; Nucleotidyltransferase.
FT DOMAIN 435 473 UBIQUITIN-LIKE.
SQ SEQUENCE 473 AA; 54625 MW; 570E0E08A51C8460 CRC64;

Query Match 90.08; Score 36; DB 1; Length 473;
Best Local Similarity 71.4%; Pred. No. 3.2;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Oy 1 KKRILHC 7
| | | | |
Db 109 KKRILHC 115

RESULT 4
ID DYN2_HUMAN STANDARD; PRT; 528 AA.
AC Q92630;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Dual-specificity tyrosine-phosphorylation regulated kinase 2
DE (EC 2.7.1.-).
GN DYRK2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Brain;
RX MEDLINE=98421512; PubMed=9748265;
RA Becker W., Weber Y., Wetzel K., Eirmbter K., Tejedor F.J., Joost H.-G.;
RA "Sequence characteristics, subcellular localization, and substrate specificity of DYRK-related kinases, a novel family of dual specificity protein kinases."
RL J. Biol. Chem. 273:25893-25902(1998).
RN [2]
RP SEQUENCE OF 320-528 FROM N.A.
RC TISSUE=Placenta;
RA Becker W., Joost H.-G.;
RA Submitted (NOV-1996) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: IN VITRO: CAN PHOSPHORYLATE HISTONES H3 AND H2B ON SER AND THR RESIDUES. MAY BE INVOLVED IN THE REGULATION OF CELLULAR GROWTH AND/OR DEVELOPMENT.
CC -1- SUBCELLULAR LOCATION: Cytoplasmic.
CC -1- PTM: AUTOPHOSPHORYLATED ON TYR RESIDUES.
CC -1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES. MNB/DYRK SUBFAMILY.

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EMBL; Y13493; CAA73885.1; -
EMBL; Y09216; CAA70418.1; -
DR HSSP; Q16539; 1WFC.
DR MIM; 603496; -
DR InterPro; IPR000719; Euk_pkinase.
DR InterPro; IPR002290; Ser_thr_pkinase.
DR Pfam; PF00069; pkinase; 2.
DR SMART; SM00220; S_TKc; 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
KW Transferase; Serine/threonine-protein kinase; Tyrosine-protein kinase.
KW ATP-binding; Phosphorylation.
FT DOMAIN 149 462 PROTEIN KINASE.
FT NP_BIND 155 163 ATP (BY SIMILARITY).
FT BINDING 178 178 ATP (BY SIMILARITY).
FT ACT_SITE 275 275 BY SIMILARITY.
SQ SEQUENCE 528 AA; 59714 MW; AF2C8622ED9522D7 CRC64;

Query Match 82.5%; Score 33; DB 1; Length 528;
Best Local Similarity 71.4%; Pred. No. 15;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Oy 1 KKRILHC 7
| | | | |
Db 268 KKRILHC 274

RESULT 5
ID AMP1_LYCES STANDARD; PRT; 571 AA.
AC Q10712; O9S9A3;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Amino-peptidase 1, chloroplast precursor (EC 3.4.11.1) (Leucine amino-peptidase) (LAP) (leucyl amino-peptidase) (proline amino-peptidase) (EC 3.4.11.5) (Prolyl amino-peptidase) (DR57).
GN LAP1 OR LAP OR LAP2.
OS Lycopersicon esculentum (Tomato).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
OC Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
OX NCBI_TaxID=4081;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CV. Peto 238R; TISSUE=Leaf;
RX MEDLINE=96421572; PubMed=8824220;
RA Gu Y.Q., Chao W.S., Walling L.L.;
RA "Localization and post-translational processing of the wound-induced leucine amino-peptidase proteins of tomato."
RL J. Biol. Chem. 271:25880-25887(1996).
RN [2]
RP SEQUENCE OF 49-571 FROM N.A.
RC STRAIN=CV. VF36; TISSUE=Pistil;
RX MEDLINE=95375233; PubMed=7647301;
RA Milligan S.B., Gasser C.S.;
RA "Nature and regulation of pistil-expressed genes in tomato."
RL Plant Mol. Biol. 28:691-711(1995).
RN [3]
RP SEQUENCE OF 103-571 FROM N.A.
RC STRAIN=CV. Peto 238R; TISSUE=Leaf;
RX MEDLINE=94052201; PubMed=8234334;
RA Pautot V., Holzer F.M., Reisch B., Walling L.L.;
RA "Leucine amino-peptidase: an inducible component of the defense response in Lycopersicon esculentum (tomato)."
RL Proc. Natl. Acad. Sci. U.S.A. 90:9906-9910(1993).
CC -1- FUNCTION: PRESUMABLY INVOLVED IN THE PROCESSING AND REGULAR TURNOVER OF INTRACELLULAR PROTEINS.

```

CC CC -!- CATALYTIC ACTIVITY: Release of an N-terminal amino acid, Xaa-|-
CC CC Xbb-, in which Xaa is preferably Leu, but may be other amino acids
CC CC including Pro although not Arg or Lys, and Xbb may be Pro.
CC CC -!- COFACTOR: BINDS TWO ZINC IONS (BY SIMILARITY).
CC CC -!- SUBCELLULAR LOCATION: Chloroplast.
CC CC -!- INDUCTION: BY WOUNDING.
CC CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY M17; ALSO KNOWN AS THE
CC CC CYTOSOL AMINOPEPTIDASE FAMILY.
CC CC -----
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CC CC or send an email to license@isb-sib.ch).
CC CC -----
CC CC EMBL; U50151; AAC49456.1; -.
CC CC EMBL; U50152; AAC49457.1; -.
CC CC EMBL; U20593; AAA80498.1; -.
CC CC HSSP; P00727; ILAM.
CC CC MEROPS; M17.002; -.
CC CC InterPro: IPR000819; Peptidase_M17.
CC CC Pfam; PF00883; Peptidase_M17; 1.
CC CC Pfam; PF02789; Peptidase_M17_N; 1.
CC CC PRINTS; PR00481; LAMNOPPTDASE.
CC CC PROSITE; PS00631; CYTOSOLAP; 1.
CC CC Transit peptide; Chloroplast; Amino-peptidase; Hydrolase; Zinc.
CC CC TRANSIT 1 53 CHLOROPLAST (POTENTIAL).
CC CC CHAIN 54 571 AMINOPEPTIDASE 1.
CC CC DOMAIN 169 174 POLY-ALA.
CC CC METAL 342 342 ZINC 2 (BY SIMILARITY).
CC CC METAL 347 347 ZINC 1 AND 2 (BY SIMILARITY).
CC CC METAL 367 367 ZINC 2 (BY SIMILARITY).
CC CC METAL 427 427 ZINC 1 (BY SIMILARITY).
CC CC METAL 429 429 ZINC 1 AND 2 (BY SIMILARITY).
CC CC ACT_SITE 354 354 POTENTIAL.
CC CC ACT_SITE 431 431 POTENTIAL.
CC CC VARIANT 358 358 R -> G.
CC CC CONFLICT 271 271 P -> N (IN REF. 2).
CC CC CONFLICT 315 315 T -> S (IN REF. 3).
CC CC CONFLICT 515 515 T -> L (IN CLONE PBLAP2).
CC CC SEQUENCE 571 AA; 60279 MW; C7A224837E73939D CRC64;

Query Match 80.0%; Score 32; DB 1; Length 571;
Best Local Similarity 83.3%; Pred. No. 26;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRILHC 7
Db 48 KRIVHC 53

RESULT 6
AMPL_SOLUTU STANDARD; PRT; 573 AA.
AC P31427;
DT 01-JUL-1993 (Rel. 26, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DE 01-MAR-2002 (Rel. 41, Last annotation update)
DE Amino-peptidase, chloroplast precursor (EC 3.4.11.1) (Leucine
DE Amino-peptidase) (LAP) (Leucyl amino-peptidase) (Proline amino-peptidase)
DE (EC 3.4.11.5) (Prolyl amino-peptidase).
GN LAP.
OS Solanum tuberosum (Potato).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
OC Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
OX NCBI_TaxID=4113;
RN [1]
RC SEQUENCE FROM N.A.
RP STRAIN=CV. DESIREE;
RX MEDLINE=94339796; PubMed=7765119;

```

```

RA Herbers K., Prat S., Willmitzer L.;
RT "Functional analysis of a leucine aminopeptidase from Solanum
RL tuberosum L.";
RN Planta 194:230-240(1994).
RP [2]
RP SEQUENCE OF 19-573 FROM N.A.
RC STRAIN=CV. DESIREE; TISSUE=Leaf;
RX MEDLINE=93005746; PubMed=1392612;
RA Hildmann T., Ebner M., Pena-Cortes H., Sanchez-Serrano J.J.,
RA Willmitzer L., Prat S.;
RT "General roles of abscisic and jasmonic acids in gene activation as a
RL result of mechanical wounding.";
RL Plant Cell 4:1157-1170(1992).
CC -!- FUNCTION: PRESUMABLY INVOLVED IN THE PROCESSING AND REGULAR
CC TURNOVER OF INTRACELLULAR PROTEINS.
CC -!- CATALYTIC ACTIVITY: Release of an N-terminal amino acid, Xaa-|-
CC Xbb-, in which Xaa is preferably Leu, but may be other amino acids
CC including Pro although not Arg or Lys, and Xbb may be Pro.
CC -!- COFACTOR: BINDS TWO ZINC IONS (BY SIMILARITY).
CC -!- SUBUNIT: HOMOHETEROMER (PROBABLE).
CC -!- SUBCELLULAR LOCATION: Chloroplast (By similarity).
CC -!- TISSUE SPECIFICITY: IN TUBERS AND FLORAL BUDS OF UNTREATED PLANTS.
CC AFTER ABA TREATMENT OR MECHANICAL WOUNDING IS MOSTLY ACCUMULATED
CC IN LEAVES, TO A LESSER EXTENT IN STEMS, BUT NOT IN ROOTS.
CC -!- INDUCTION: BY ABSICISIC ACID (ABA), JASMONIC ACID (JA) AND
CC WOUNDING.
CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY M17; ALSO KNOWN AS THE
CC CYTOSOL AMINOPEPTIDASE FAMILY.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; X77015; CAA54314.1; -.
CC EMBL; X67845; CAA48038.1; -.
CC PIR; S24769; S24769.
CC PIR; PQ0470; PQ0470.
CC HSSP; P00727; ILAM.
CC MEROPS; M17.002; -.
CC InterPro: IPR000819; Peptidase_M17.
CC Pfam; PF00883; Peptidase_M17; 1.
CC Pfam; PF02789; Peptidase_M17_N; 1.
CC PRINTS; PR00481; LAMNOPPTDASE.
CC PROSITE; PS00631; CYTOSOLAP; 1.
CC Transit peptide; Chloroplast; Amino-peptidase; Hydrolase; Zinc.
CC TRANSIT 1 53 CHLOROPLAST (POTENTIAL).
CC CHAIN 54 573 AMINOPEPTIDASE.
CC DOMAIN 169 174 POLY-ALA.
CC METAL 342 342 ZINC 2 (BY SIMILARITY).
CC METAL 347 347 ZINC 1 AND 2 (BY SIMILARITY).
CC METAL 367 367 ZINC 2 (BY SIMILARITY).
CC METAL 427 427 ZINC 1 (BY SIMILARITY).
CC METAL 429 429 ZINC 1 AND 2 (BY SIMILARITY).
CC ACT_SITE 354 354 POTENTIAL.
CC ACT_SITE 431 431 POTENTIAL.
CC SEQUENCE 573 AA; 60122 MW; 3152145A47FB291 CRC64;

Query Match 80.0%; Score 32; DB 1; Length 573;
Best Local Similarity 83.3%; Pred. No. 27;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRILHC 7
Db 48 KRIVHC 53

RESULT 7
PIPL_YEAST STANDARD; PRT; 925 AA.
ID PIP1_YEAST

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AC P40020;
DT 01-NOV-1995 (Rel. 31, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE Polymerase-interacting protein 1 (factor interacting with REF).
GN PIP1 OR FIR1 OR YER032W.
OS Saccharomyces cerevisiae (Baker's yeast).
OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC Saccharomycetales; Saccharomycetaceae; Saccharomyces.
OX NCBI_TaxID=4932;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=W303;
RA del Olmo M., Gross S., Moore C.L.;
RL Submitted (FEB-1997) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=S288C / AB972;
RA Dietrich F.S., Mulligan J.T., Hennessey K.M., Allen E., Araujo R.,
RA Aviles E., Berno A., Brennan T., Carpenter J., Chen E., Cherry J.M.,
RA Chung E., Duncan M., Guzman E., Hartzell G., Hunnicke-Smith S.,
RA Hyman R., Kayser A., Komp C., Lashkari D., Lew H., Lin D.,
RA Mosedale D., Nakahara K., Namath A., Norgren R., Oefner P., Oh C.,
RA Petel F.X., Roberts D., Sehl P., Schramm S., Shogren T., Smith V.,
RA Taylor P., Wei Y., Yelton M., Botstein D., Davis R.W.;
RL Submitted (DEC-1994) to the EMBL/GenBank/DBJ databases.
RN [3]
RP CHARACTERIZATION.
RX MEDLINE=97339480; PubMed=9196079;
RA Russnak R., Pereira S., Platt T.;
RT "RNA binding analysis of yeast REF2 and its two-hybrid interaction
RL Gene Expr. 6:241-258(1996).
CC -1- FUNCTION: Interacts with poly(A) polymerase and with REF2.
CC
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CC or send an email to license@isb-sib.ch).
CC
CC EMBL; U17262; AAB46625.1; -
DR EMBL; U18778; AAB64565.1; -
DR SCD: S0000834; FIR1.
FT CONFLICT 663 663 R -> P (IN REF. 2).
SQ SEQUENCE 925 AA; 104701 MW; 707D9839EE31322B CRC64;

Query Match 80.0%; Score 32; DB 1; Length 925;
Best Local Similarity 71.4%; Pred. No. 43;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
Db 841 KKRILHC 847

RESULT 8
FKB2_MOUSE
ID FKB2_MOUSE STANDARD; PRT; 140 AA.
AC P45878;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE FK506-binding protein precursor (FKBP-13) (peptidyl-prolyl cis-trans
DE isomerase) (PPIase) (EC 5.2.1.8).
GN FKB2 OR FKBP13.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
OX NCBI_TaxID=10090;
RN [1]

RP SEQUENCE FROM N.A.
RC STRAIN=129/SVJ; TISSUE=Liver;
RX MEDLINE=94085790; PubMed=7505249;
RA Hendrickson B.A., Zhang W., Craig R.J., Jin Y.J., Bierer R.E.,
RA Burakoff S.J., Dilella A.G.;
RT "Structural organization of the genes encoding human and murine
RL FK506-binding protein (FKBP) 13 and comparison to FKBP1.";
RL Gene 134:271-275(1993).
CC -1- FUNCTION: PPIases accelerate the folding of proteins. May function
CC as a component of membrane cytoskeletal scaffolds.
CC -1- CATALYTIC ACTIVITY: CIS-TRANS ISOMERIZATION OF PROLINE IMIDIC
CC PEPTIDE BONDS IN OLIGOPEPTIDES.
CC -1- ENZYME REGULATION: INHIBITED BY BOTH FK506 AND RAPAMYCIN.
CC -1- SUBUNIT: Interacts with the C-terminal domain of 4.1G.
CC -1- SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM LUMEN. MEMBRANE
CC ASSOCIATED (PROBABLE).
CC -1- SIMILARITY: BELONGS TO THE FKBP-TYPE PPIASE FAMILY.
CC
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CC
CC EMBL; M77831; AAA37631.1; -
DR HSP; P20081; IYAT.
DR MGD: MGI:95342; FKBP2.
DR InterPro: IPR001179; FKBP_PPIase.
DR Pfam: PF00254; FKBP; 1.
DR PROSITE: PS00453; FKBP_PPIASE_1; 1.
DR PROSITE: PS00454; FKBP_PPIASE_2; 1.
DR PROSITE: PS00509; FKBP_PPIASE_3; 1.
KW Isomerase; Rotamase; Signal; Endoplasmic reticulum.
FT SIGNAL 1 22 POTENTIAL.
FT CHAIN 23 140 FK506-BINDING PROTEIN.
FT SITE 137 140 PREVENT SECRETION FROM ER (POTENTIAL).
SQ SEQUENCE 140 AA; 15344 MW; F4E7FCC7766A0416 CRC64;

Query Match 77.5%; Score 31; DB 1; Length 140;
Best Local Similarity 71.4%; Pred. No. 11;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
Db 34 KKRVDHC 40

RESULT 9
FKB2_HUMAN
ID FKB2_HUMAN STANDARD; PRT; 141 AA.
AC P26885;
DT 01-AUG-1992 (Rel. 23, Created)
DT 01-AUG-1992 (Rel. 23, Last sequence update)
DT 15-JUL-1999 (Rel. 38, Last annotation update)
DE FK506-binding protein precursor (FKBP-13) (peptidyl-prolyl cis-trans
DE isomerase) (PPIase) (EC 5.2.1.8).
GN FKB2 OR FKBP13.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE-Colon carcinoma;
RX MEDLINE=91319747; PubMed=1713687;
RA Jin Y.-J., Albers M.W., Lane W.S., Bierer B.E., Schreiber S.L.,
RA Burakoff S.J.;
RT "Molecular cloning of a membrane-associated human FK506- and
RL rapamycin-binding protein, FKBP-13.";
RL Proc. Natl. Acad. Sci. U.S.A. 88:6677-6681(1991).
RN [2]

RP SEQUENCE FROM N.A.
RX MEDLINE=93112052; PubMed=1281998;
RA Dillella A.G., Hawkins A., Craig R.J., Schreiber S.L., Griffin C.A.;
RT "Chromosomal band assignments of the genes encoding human FKBP12 and
FKBP13".
RL Biochem. Biophys. Res. Commun. 189:819-823(1992).
CC -1- FUNCTION: PPIASES ACCELERATE THE FOLDING OF PROTEINS.
CC -1- CATALYTIC ACTIVITY: CIS-TRANS ISOMERIZATION OF PROLINE IMIDIC
PEPTIDE BONDS IN OLIGOPEPTIDES.
CC -1- ENZYME REGULATION: INHIBITED BY BOTH FK506 AND RAPAMYCIN.
CC -1- SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM LUMEN. MEMBRANE
ASSOCIATED (PROBABLE).
CC -1- TISSUE SPECIFICITY: T-CELLS AND THYMUS.
CC -1- SIMILARITY: BELONGS TO THE FKBP-TYPE PPIASE FAMILY.
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CC
DR EMBL; M65128; AAA58473.1; -;
DR EMBL; M75099; AAA36563.1; -;
DR PIR; JC1365; JC1365.
DR HSP; Q00686; IPBK.
DR MIM; 186946; -;
DR InterPro: IPR001179; FKBP_PPIase.
DR Pfam; PF00254; FKBP; 1.
DR PROSITE; PS00453; FKBP_PPIASE_1; 1.
DR PROSITE; PS00454; FKBP_PPIASE_2; 1.
DR PROSITE; PS00059; FKBP_PPIASE_3; 1.
KW Isomerase; Rotamase; Signal; Endoplasmic reticulum; Polymorphism.
FT SIGNAL 1 21
FT CHAIN 22 141 FK506-BINDING PROTEIN.
FT SITE 138 141 PREVENT SECRETION FROM ER (POTENTIAL).
FT VARIANT 21 21 S -> TA.
FT VARIANT 24 24 /FTid=VAR_006410.
FT VARIANT 96 96 T -> A.
FT VARIANT 96 96 Y -> C.
FT SEQUENCE 141 AA; 15654 MW; 9F4751CA7D82D064 CRC64;
Query Match 77.5%; Score 31; DB 1; Length 141;
Best Local Similarity 71.4%; Pred. No. 11;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 KKRILHC 7
Db 35 KKRVDHC 41
RESULT 10
YHP5_YEAST STANDARD; PRT; 144 AA.
AC P38808;
DT 01-FEB-1995 (Rel. 31, Created)
DT 01-FEB-1995 (Rel. 31, Last sequence update)
DT 01-FEB-1995 (Rel. 31, Last annotation update)
DE Hypothetical 16.7 kDa protein in HXT1-HXT5 intergenic region.
GN YHR095W.
OS Saccharomyces cerevisiae (Baker's yeast).
OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC Saccharomycetales; Saccharomycetaceae; Saccharomycetes.
OX NCBI_TaxID=4932;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=S288C / AB972;
RX MEDLINE=94378003; PubMed=8091229;
RA Johnston M., Andrews S., Brinkman R., Cooper J., Ding H., Dover J.,
Du Z., Favella A., Fulton L., Gattung S., Geisel C., Kirsten J.,
n.

RA Kucaba T., Hillier L., Jier M., Johnston L., Langston Y.,
RA Latrelle P., Louis E.J., Macri C., Mardis E., Meneses S., Mouser L.,
RA Nhan M., Rifkin L., Riles L., St Peter H., Trevaskis E., Vaughan K.,
RA Vignati D., Wilcox L., Wohldman P., Waterston R., Wilson R.,
RA Vaudin M.;
RT "Complete nucleotide sequence of Saccharomyces cerevisiae chromosome
VIII".
RL Science 265:2077-2082(1994).
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CC
DR EMBL; U00060; AAB68924.1; -;
DR PIR; S46716; S46716.
DR SGD; S0001137; YHR095W.
KW Hypothetical protein.
SQ SEQUENCE 144 AA; 16678 MW; 1AB89491523EEA89 CRC64;
Query Match 77.5%; Score 31; DB 1; Length 144;
Best Local Similarity 100.0%; Pred. No. 11;
Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 KKRILH 6
Db 118 KKRILH 123
RESULT 11
YZG1_CAEEL STANDARD; PRT; 257 AA.
ID YZG1_CAEEL
AC P55326; Q19405;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Hypothetical 28.7 kDa protein F13E6.1 in chromosome X.
GN F13E6.1.
OS Caenorhabditis elegans.
OC Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditioidea;
OC Rhabditidae; Peloderinae; Caenorhabditis.
OX NCBI_TaxID=6239;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BRISTOL N2;
RA Margerison S.;
RL Submitted (NOV-1995) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: BELONGS TO THE TPD52 FAMILY.
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CC
DR EMBL; Z68105; CAA92122.1; -;
DR WormPep; F13E6.1; CE03198.
KW Hypothetical protein; Coiled coil.
FT DOMAIN 48 97 COILED COIL (POTENTIAL).
SQ SEQUENCE 257 AA; 28696 MW; 2A2A667672A8328A CRC64;
Query Match 77.5%; Score 31; DB 1; Length 257;
Best Local Similarity 100.0%; Pred. No. 19;
Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 KKRILH 6
Db 157 KKRILH 162

```

OC Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae;
OX Haemophilus.
NCBI_TaxID=727;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=RD / KW20 / ATCC 51907;
RX MEDLINE=95350630; PubMed=7542800;
RA Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F.,
RA Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M.,
RA McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D.,
RA Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M.,
RA Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D.,
RA Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C.,
RA Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M.,
RA Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
RA Venter J.C.;
RT "Whole-genome random sequencing and assembly of Haemophilus
RT Influenzae Rd.";
RL Science 269:496-512(1995).
CC -1- SIMILARITY: BELONGS TO THE SUN (BACTERIAL) / NUCLEOLAR PROTEIN
CC NOLL/NOP2 (EUKARYOTES) FAMILY.
CC -----
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CC -----
CC EMBL; U02745; AAC22284.1; -
CC TIGR; H10624; -
CC InterPro; IPR001678; Noll_Nop2_Sun.
CC InterPro; IPR000139; NusB.
CC InterPro; IPR000051; SAM_bind.
CC Pfam; PF01189; Noll_Nop2_Sun; 1.
CC Pfam; PF01029; NusB; 1.
CC ProDom; PD005242; NusB; 1.
CC PROSITE; PS01153; NOLL_NOP2_SUN; 1.
CC Complete proteome.
KW SEQUENCE 451 AA; 50597 MW; D91FAB88FFDE34B0 CRC64;
SQ
Query Match 77.5%; Score 31; DB 1; Length 451;
Best Local Similarity 71.4%; Pred. No. 34;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
Db 88 KTRIVHC 94
I :|:|:|
| :|:|:|

RESULT 14
ID YD2H_SCHPO STANDARD; PRT; 560 AA.
AC Q10264; O13893;
DT 01-OCT-1996 (Rel. 34, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DE Hypothetical 63.1 kDa protein C56F8.17C in chromosome I.
GN SPAC56F8.17C OR SPAC22A12.01C.
OS Schizosaccharomyces pombe (Fission yeast).
OC Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
OC Schizosaccharomycetales; Schizosaccharomycetaceae;
OC Schizosaccharomycetes.
OX NCBI_TaxID=4896;
RN [1]
RP SEQUENCE OF 1-105 FROM N.A.
RC STRAIN=972;
RA Pearson D., Churcher C.M., Wood V., Barrell B.G., Rajandream M.A.;
RL Submitted (FEB-2000) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE OF 34-560 FROM N.A.
RC STRAIN=972;

```

RA Pearson D., Churcher C.M., Barrell B.G., Rajandream M.A., Walsh S.V.;
RL Submitted (FEB-1996) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: SOME, TO YEAST SNM1
CC -----
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CC -----

DR EMBL; Z99295; CAB16571.2; -;
DR EMBL; Z69728; CAA93588.1; -;
KW Hypothetical protein.
SQ SEQUENCE 560 AA; 63076 MW; BF4BDE8C28EAD227 CRC64;

Query Match 77.5%; Score 31; DB 1; Length 560;
Best Local Similarity 66.7%; Pred. No. 42;
Matches 4; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRILHC 7
Db 295 RRVLHC 300
:|:|:|

RESULT 15
REP_HAEIN STANDARD; PRT; 670 AA.
ID REP_HAEIN STANDARD; PRT; 670 AA.
AC P44804;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE ATP-dependent DNA helicase rep (EC 3.6.1.-).
GN REP OR HI0649.
OS Haemophilus influenzae.
OC Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae;
OC Haemophilus.
OX NCBI_TaxID=727;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-RD / KW20 / ATCC 51907;
RX MEDLINE=95350630; PubMed=7542800;
RA Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F.,
RA Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M.,
RA McInerney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D.,
RA Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M.,
RA Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D.,
RA Uterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C.,
RA Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M.,
RA Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
RA Venter J.C.;
RT "Whole-genome random sequencing and assembly of Haemophilus
RT influenzae Rd.";
RL Science 269:496-512(1995).
CC -1- FUNCTION: REP HELICASE IS A SINGLE-STRANDED DNA-DEPENDENT
CC ATPASE INVOLVED IN DNA REPLICATION; IT CAN INITIATE UNWINDING
CC AT A NICK IN THE DNA. IT BINDS TO THE SINGLE-STRANDED DNA AND
CC ACTS IN A PROGRESSIVE FASHION ALONG THE DNA IN THE 3' TO 5'
CC DIRECTION (BY SIMILARITY).
CC -1- SIMILARITY: BELONGS TO THE HELICASE FAMILY. UVRD SUBFAMILY.
CC -----
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CC -----
DR EMBL; U32748; AAC22309.1; -;
DR HSSP; P09980; 10AA.
DR TIGR; HI0649; -;

DR InterPro; IPR000212; UvrD-helicase.
DR Pfam; PF00580; UvrD-helicase; 1.
KW Hydrolase; Helicase; DNA replication; ATP-binding; DNA-binding;
KW Complete proteome.
FT NP_BIND 22 29 ATP (POTENTIAL).
SQ SEQUENCE 670 AA; 77745 MW; 802A131251ED4E24 CRC64;

Query Match 77.5%; Score 31; DB 1; Length 670;
Best Local Similarity 83.3%; Pred. No. 50;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRILHC 7
Db 281 QRILHC 286
:|:|:|

Search completed: November 1, 2002, 14:47:49
Job time : 1.36013 secs

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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:58 ; Search time 0.742765 Seconds
(without alignments)
905.569 Million cell updates/sec

Title: US-09-606-129a-34
Perfect score: 40
Sequence: 1 KKRILHC 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_71.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	40	100.0	296	G02066	billiverdin reducta
2	40	100.0	296	S62624	billiverdin reducta
3	38	95.0	295	A42268	billiverdin reducta
4	38	95.0	512	H86206	hypothetical prote
5	38	95.0	633	T04537	hypothetical prote
6	35	87.5	508	T02486	hypothetical prote
7	34	85.0	457	C86463	hypothetical prote
8	33	82.5	137	T46904	hypothetical prote
9	33	82.5	401	F85015	probable phosphati
10	33	82.5	431	T01723	1-phosphatidylinos
11	32	80.0	144	H41700	C6 protein - rabbi
12	32	80.0	189	A38117	hypothetical prote
13	32	80.0	189	AD2414	transposase all486
14	32	80.0	189	AE2064	transposase all206
15	32	80.0	189	AF2052	transposase all197
16	32	80.0	189	AF2152	transposase alr277
17	32	80.0	189	AG1875	transposase alr055
18	32	80.0	189	AG2037	transposase alr185
19	32	80.0	383	S51651	cyclin delta-2 - A
20	32	80.0	566	T07850	leucyl aminopeptid
21	32	80.0	571	T07047	leucyl aminopeptid
22	32	80.0	571	T07849	leucyl aminopeptid
23	32	80.0	573	S41376	leucyl aminopeptid
24	32	80.0	925	S50490	hypothetical prote
25	32	80.0	1257	T01020	hypothetical prote
26	31	77.5	42	T07474	hypothetical prote
27	31	77.5	100	AI0092	probable membrane
28	31	77.5	140	I49668	binding protein -
29	31	77.5	142	JC1365	FK506/rapamycin-bi

30	31	77.5	144	2	S46716	hypothetical prote
31	31	77.5	145	2	F75189	hypothetical prote
32	31	77.5	257	2	E89632	protein F1366.1 li
33	31	77.5	423	2	S39830	hypothetical prote
34	31	77.5	451	1	F64155	hypothetical prote
35	31	77.5	502	2	T40792	hypothetical prote
36	31	77.5	504	2	JC4775	interferon-induced
37	31	77.5	504	2	A56534	hypothetical prote
38	31	77.5	508	2	T22440	hypothetical prote
39	31	77.5	522	2	E86453	CDS protein F911.
40	31	77.5	539	2	T38927	hypothetical prote
41	31	77.5	551	2	T11629	NADH dehydrogenase
42	31	77.5	698	2	D64084	helicase (EC 3.6.1
43	31	77.5	707	2	T34444	hypothetical prote
44	31	77.5	817	2	T22442	hypothetical prote
45	31	77.5	1058	2	T13286	cappuccino gene pr

ALIGNMENTS

RESULT 1

G02066
billiverdin reductase (EC 1.3.1.24) - human
N:Alternate names: billiverdin IX-alpha reductase
C:Species: Homo sapiens (man)
C>Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 17-Jul-1998
C:Accession: G02066
R:Komuro, A.; Tobe, T.; Nakano, Y.; Yamaguchi, T.; Tomita, M.
submitted to the EMBL Data Library, August 1995
A:Reference number: H00768
A:Accession: G02066
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-296 <COM>
A:Cross-references: EMBL:U34877; NID:g1143231; PID:g1143232
C:Keywords: oxidoreductase

Query Match 100.0%; Score 40; DB 2; Length 296;
Best Local Similarity 100.0%; Pred. No. 0.96;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|||||||
DB 275 KKRILHC 281

RESULT 2

S62624
billiverdin reductase (EC 1.3.1.24) - human
N:Alternate names: billiverdin IX-alpha reductase
C:Species: Homo sapiens (man)
C>Date: 28-Oct-1996 #sequence_revision 09-May-1997 #text_change 21-Jul-2000
C:Accession: S62624; S62622; S29736
R:Maines, M.D.; Polevoda, B.V.; Huang, T.J.; McCoubrey Jr., W.K.
Eur. J. Biochem. 235, 372-381, 1996
A:Title: Human billiverdin IX-alpha reductase is a zinc-metalloprotein. Characterization
A:Reference number: S62622; MUID:96202961
A:Accession: S62624
A:Molecule type: mRNA
A:Residues: 1-296 <MAI>
A:Cross-references: EMBL:X93086; NID:g1246748; PIDN:CAA63635.1; PID:g1246749
A:Accession: S62622
A:Molecule type: protein
A:Residues: 3-24,'X',26-27,'X',29-36;48-74;228-234;235-248 <NAF>
R:Maines, M.D.; Trakshel, G.M.
Arch. Biochem. Biophys. 300, 320-326, 1993
A:Title: Purification and characterization of human billiverdin reductase.
A:Reference number: S29736; MUID:93143333
A:Accession: S29736
A:Molecule type: protein
A:Residues: 3-24,'X',26-27,'X',29-36;48-74;228-234;235-248 <NAW>
A>Note: the sequence of peptide 1 from page 323 seems not to belong to this protein

C;Genetics:
A;Gene: BVR
C;Keywords: oxidoreductase
F;3-296/Product: biliverdin reductase IX-alpha #status experimental <MAT>

Query Match 100.0%; Score 40; DB 2; Length 296;
Best Local Similarity 100.0%; Pred. No. 0.96;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|||||

Db 275 KKRILHC 281

RESULT 3

A42268
biliverdin reductase (EC 1.3.1.24) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C;Accession: A42268
R;Fakhrai, H.; Maines, M.D.
J. Biol. Chem. 267, 4023-4029, 1992
A;Title: Expression and characterization of a cDNA for rat kidney biliverdin reductase.
A;Reference number: A42268; MUID:92156147
A;Accession: A42268
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: nucleic acid; protein
A;Residues: 1-295 <FAK>
A;Cross-references: GB:M81681; NID:g203177; PIDN:AAA40830.1; PID:g203178
A;Experimental source: kidney
A;Note: sequence extracted from NCBI backbone (NCBIP:82800)
C;Keywords: liver; oxidoreductase

Query Match 95.0%; Score 38; DB 2; Length 295;
Best Local Similarity 85.7%; Pred. No. 2.5;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|||||

Db 274 KKRILHC 280

RESULT 4

H86206
hypothetical protein [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Accession: H86206
R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso,
Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.;
ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.
C.A.; Li, J.H.; Li, X.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali,
Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon,
ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719
A;Accession: H86206
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-512 <STO>
A;Cross-references: GB:AE005172; NID:g8954028; PIDN:AAF82202.1; GSPDB:GN00141
C;Genetics:
A;Map position: 1

Query Match 95.0%; Score 38; DB 2; Length 512;
Best Local Similarity 85.7%; Pred. No. 4.1;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|||||

Db 236 KKRILHC 242

RESULT 5

T04537
hypothetical protein F28J12.70 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 14-May-1999
C;Accession: T04537
R;Bevan, M.; Hilbert, H.; Braun, M.; Holzer, E.; Brandt, A.; Duesterhoeft, A.; Bancro
submitted to the Protein Sequence Database, February 1998
A;Reference number: Z15377
A;Accession: T04537
A;Molecule type: DNA
A;Residues: 1-633 <BEV>
A;Cross-references: EMBL:AL021710
A;Experimental source: cultivar Columbia; BAC clone F28J12
C;Genetics:
A;Map position: 4
A;Introns: 281/3; 303/3; 442/1; 614/3
A;Note: F28J12.70

Query Match 95.0%; Score 38; DB 2; Length 633;
Best Local Similarity 85.7%; Pred. No. 5;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|||||

Db 591 KKRILHC 597

RESULT 6

T02486
hypothetical protein At2g29990 [imported] - Arabidopsis thaliana
N;Alternate names: hypothetical protein F23F1.9
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 05-Mar-1999 #sequence_revision 05-Mar-1999 #text_change 16-Feb-2001
C;Accession: T02486; B84703
R;Rounsley, S.D.; Lin, X.; Ketchum, K.A.; Crosby, M.L.; Brandon, R.C.; Sykes, S.M.; K
submitted to the EMBL Data Library, August 1998
A;Description: Arabidopsis thaliana chromosome II BAC F23F1 genomic sequence.
A;Reference number: Z14675
A;Accession: T02486
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-508 <ROU>
A;Cross-references: EMBL:AC004680; NID:g3420043; PID:g3420052
A;Experimental source: cultivar Columbia
R;Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon,
euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter
Nature 402, 761-768, 1999
A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A;Reference number: A84420; MUID:20083487
A;Accession: B84703
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-508 <STO>
A;Cross-references: GB:AE002093; NID:g3420052; PIDN:AAC31853.1; GSPDB:GN00139
C;Genetics:
A;Gene: At2g29990; F23F1.9
A;Map position: 2
A;Introns: 158/3; 230/1; 283/3; 305/3; 360/2; 398/3; 458/3
C;Superfamily: NADH dehydrogenase

Query Match 87.5%; Score 35; DB 2; Length 508;
Best Local Similarity 71.4%; Pred. No. 17;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|:|:|

Db 236 KKRILHC 242


```

RESULT 7
C86463
hypothetical protein T3M13.4 - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Dec-2001
C:Accession: C86463
R:Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso,
Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.;
ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A:Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.;
C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali,
Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A:Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon,
ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A:Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A:Reference number: AB6141; MUID:21016719
A:Accession: C86463
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-497 <SPOT>
A:Cross-references: GB:AE005172; NID:g6957509; PIDN:AAF32431.1; GSPDB:GN00141
C:Genetics:
A:Map position: 1

Query Match      85.0%; Score 34; DB 2; Length 497;
Best Local Similarity 83.3%; Pred. No. 27;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 2 KRILHC 7
    |||||
Db 434 KRVLHC 439

RESULT 8
T46904
hypothetical protein DKFzp761D081.1 - human
C:Species: Homo sapiens (man)
C:Date: 17-Mar-2000 #sequence_revision 17-Mar-2000 #text_change 02-Sep-2000
C:Accession: T46904
R:Ottenwaelder, B.; Obermaier, B.; Mewes, H.W.; Weil, B.; Wiemann, S.
submitted to the Protein Sequence Database, February 2000
A:Reference number: Z24136
A:Accession: T46904
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-137 <AAA>
A:Cross-references: EMBL:AL157474
A:Experimental source: adult amygdala; clone DKFzp761D081
C:Genetics:
A:Note: DKFzp761D081.1
C:Superfamily: RING finger homology
F:81-131/Domain: RING finger homology <RRN>

Query Match      82.5%; Score 33; DB 2; Length 137;
Best Local Similarity 85.7%; Pred. No. 14;
Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
    ||| |||
Db 63 KKRKLHC 69

RESULT 9
F85015
probable phosphatidylinositol kinase [imported] - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 16-Feb-2001
C:Accession: F85015
R:anonymous, The European Union Arabidopsis Genome Sequencing Consortium, The Cold Spring
Nature 402, 769-777, 1999
A:Title: Sequence and analysis of chromosome 4 of the plant Arabidopsis thaliana.

```

```

A:Reference number: A85001; MUID:20083488
A:Accession: F85015
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-401 <SPOT>
A:Cross-references: GB:NC_001268; NID:g7267616; PIDN:CAB80928.1; GSPDB:GN00140
C:Genetics:
A:Gene: AT4g01190
A:Map position: 4

Query Match      82.5%; Score 33; DB 2; Length 401;
Best Local Similarity 85.7%; Pred. No. 36;
Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
    ||||| ||
Db 353 KKRIEHC 359

RESULT 10
T01723
1-phosphatidylinositol-4-phosphate 5-kinase type II homolog - Arabidopsis thaliana
N:Alternate names: protein A_IG002N01.9
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 19-Feb-1999 #sequence_revision 19-Feb-1999 #text_change 24-Mar-1999
C:Accession: T01723
R:Scheet, P.; Maggil, L.
submitted to the EMBL Data Library, June 1997
A:Description: The sequence of A. thaliana IG002N01.
A:Reference number: Z14407
A:Accession: T01723
A:Status: translated from GB/EMBL/DBDJ
A:Molecule type: DNA
A:Residues: 1-431 <SCH>
A:Cross-references: EMBL:AF007269; NID:g2191126; PID:g2191143
A:Experimental source: cultivar Columbia
C:Genetics:
A:Map position: 4
A:Introns: 40/2; 94/3; 161/3; 224/2; 255/1; 271/1; 303/1; 339/2
A:Note: A_IG002N01.9

Query Match      82.5%; Score 33; DB 2; Length 431;
Best Local Similarity 85.7%; Pred. No. 38;
Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
    ||||| ||
Db 383 KKRIEHC 389

RESULT 11
H41700
C6 protein - rabbit fibroma virus
C:Species: rabbit fibroma virus, Shope fibroma virus
C:Date: 23-Apr-1993 #sequence_revision 23-Apr-1993 #text_change 07-May-1999
C:Accession: H41700
R:Strayer, D.S.; Jerng, H.H.; O'Connor, K.
Virology 185, 585-595, 1991
A:Title: Sequence and analysis of a portion of the genomes of Shope fibroma virus and
A:Reference number: A41700; MUID:92074222
A:Accession: H41700
A:Status: translation not shown
A:Molecule type: DNA
A:Residues: 1-144 <STR>
A:Cross-references: GB:M32743

Query Match      80.0%; Score 32; DB 2; Length 144;
Best Local Similarity 57.1%; Pred. No. 23;
Matches 4; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
    ||: ||
Db 73 KKNVHC 79

```

RESULT 12

A38117
hypothetical protein 1 - Anabaena sp. insertion sequence IS895
C:Species: Anabaena sp.
C:Date: 24-Jul-1992 #sequence_revision 24-Jul-1992 #text_change 15-Oct-1999
C:Accession: A38117
R:Alam, J.; Vrba, J.M.; Cai, Y.; Martin, J.A.; Weislo, L.J.; Curtis, S.E.
J. Bacteriol. 173, 5778-5783, 1991
A:Title: Characterization of the IS895 family of insertion sequences from the cyanobacterium Anabaena sp.
A:Reference number: A38117; MUID:91358370
A:Accession: A38117
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-189 <ALA>
A:Cross-references: GB:M67475; NID:gl42026; PIDN:AAA98138.1; PID:gl42027
A:Experimental source: strain PCC 7120
C:Genetics:
A:Mobile element: insertion sequence IS895

Query Match 80.0%; Score 32; DB 2; Length 189;
Best Local Similarity 71.4%; Pred. No. 29;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|||: ||

Db 171 KKRILHC 177

RESULT 13

AD2414
transposase all4868 [imported] - Anabaena sp. (strain PCC 7120)
C:Species: Anabaena sp.
A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
C:Accession: AD2414
R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S.
DNA Res. 8, 205-213, 2001
A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena sp.
A:Reference number: AB1807; MUID:21595285; PMID:11759840
A:Accession: AD2414
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-189 <KUR>
A:Cross-references: GB:BA000019; PIDN:BAB76567.1; PID:gl7134005; GSPDB:GN00179
A:Experimental source: strain PCC 7120
C:Genetics:
A:Gene: all4868

Query Match 80.0%; Score 32; DB 2; Length 189;
Best Local Similarity 71.4%; Pred. No. 29;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|||: ||

Db 171 KKRILHC 177

RESULT 14

AE2064
transposase all2067 [imported] - Anabaena sp. (strain PCC 7120)
C:Species: Anabaena sp.
A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
C:Accession: AE2064
R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S.
DNA Res. 8, 205-213, 2001
A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena sp.
A:Reference number: AB1807; MUID:21595285; PMID:11759840
A:Accession: AE2064

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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:44:48 ; Search time 0.585209 Seconds
(without alignments)
292.168 Million cell updates/sec

Title: us-09-606-129a-34

Perfect score: 40

Sequence: 1 KKRILHC 7

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Issued_Patents_AA.*

1: /cgn2_6/ptodata/1/iaa/5A.COMB.pep.*

2: /cgn2_6/ptodata/1/iaa/5B.COMB.pep.*

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5: /cgn2_6/ptodata/1/iaa/PCTUS.COMB.pep.*

6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	34	85.0	269	4	US-09-006-783A-5
2	34	85.0	294	2	US-09-258-371-10
3	34	85.0	294	3	US-08-751-230-10
4	34	85.0	294	4	US-09-499-082-10
5	34	85.0	294	4	US-09-258-372-10
6	34	85.0	294	4	US-09-006-783A-3
7	33	82.5	527	4	US-09-659-166-2
8	33	82.5	528	2	US-08-802-466-2
9	33	82.5	528	4	US-09-350-484-2
10	32	80.0	565	2	US-08-892-770-6
11	32	80.0	571	2	US-08-892-770-5
12	31	77.5	40	1	US-07-822-666B-4
13	31	77.5	88	1	US-08-336-618-19
14	31	77.5	99	5	PCT-US92-03993-5
15	31	77.5	141	1	US-07-822-966B-6
16	31	77.5	141	2	US-08-803-899-6
17	31	77.5	142	1	US-08-336-618-18
18	31	77.5	142	5	PCT-US92-03993-7
19	31	77.5	257	2	US-08-715-204-6
20	31	77.5	257	3	US-09-162-597-6
21	31	77.5	504	3	US-09-231-529-6
22	31	77.5	504	4	US-08-977-816-6
23	31	77.5	508	2	US-08-818-024-3
24	31	77.5	508	4	US-09-334-775A-3
25	30	75.0	55	1	US-08-469-427A-3
26	30	75.0	55	2	US-08-609-443B-3
27	30	75.0	55	2	US-08-569-063C-3

28	30	75.0	188	1	US-08-469-427A-5	Sequence 5, Appli
29	30	75.0	188	2	US-08-609-443B-5	Sequence 5, Appli
30	30	75.0	188	2	US-08-569-063C-5	Sequence 5, Appli
31	30	75.0	195	1	US-08-469-427A-7	Sequence 7, Appli
32	30	75.0	195	2	US-08-609-443B-7	Sequence 7, Appli
33	30	75.0	195	2	US-08-569-063C-7	Sequence 7, Appli
34	30	75.0	396	3	US-09-082-310-2	Sequence 2, Appli
35	30	75.0	568	2	US-08-835-170-4	Sequence 4, Appli
36	30	75.0	568	4	US-09-359-257-4	Sequence 4, Appli
37	30	75.0	588	2	US-08-835-170-2	Sequence 2, Appli
38	30	75.0	588	4	US-09-359-257-2	Sequence 2, Appli
39	29	72.5	377	2	US-08-969-106-6	Sequence 6, Appli
40	29	72.5	377	4	US-09-054-492B-1	Sequence 1, Appli
41	28	70.0	22	1	US-08-484-635-166	Sequence 166, App
42	28	70.0	22	1	US-08-484-631-166	Sequence 166, App
43	28	70.0	22	2	US-08-827-570-166	Sequence 166, App
44	28	70.0	34	4	US-08-974-549A-200	Sequence 200, App
45	28	70.0	69	3	US-08-851-843A-14	Sequence 14, Appli

ALIGNMENTS

RESULT 1

US-09-006-783A-5

; Sequence 5, Application US/09006783A

; Patent No. 6297366

; GENERAL INFORMATION:

; APPLICANT: Gudkov, Andrey V

; APPLICANT: Garkavstev, Igor

; APPLICANT: Riabowol, Karl

; TITLE OF INVENTION: p33/ING1 as a Mediator of p53 Signaling

; TITLE OF INVENTION: Pathway

; NUMBER OF SEQUENCES: 7

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: McDonnell Boenhen Hulbert & Berghoff

; STREET: 300 South Wacker Drive

; CITY: Chicago

; STATE: Illinois

; COUNTRY: USA

; ZIP: 60606

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patentin Release #1.0, Version #1.30

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/09/006.783A

; FILING DATE: 15-JAN-1998

; CLASSIFICATION: 435

; ATTORNEY/AGENT INFORMATION:

; NAME: No. 6297366nan, Kevin E

; REGISTRATION NUMBER: 35,303

; REFERENCE/DOCKET NUMBER: 97,837

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 312-913-0001

; TELEFAX: 312-913-0002

; INFORMATION FOR SEQ ID NO: 5:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 269 amino acids

; TYPE: amino acid

; TOPOLOGY: linear

; MOLECULE TYPE: protein

; US-09-006-783A-5

Query Match 85.0%; Score 34; DB 4; Length 269;

Best Local Similarity 71.4%; Pred. No. 13;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRILHC 7

Db 67 KRRMLHC 73

RESULT 2
US-09-258-371-10
; Sequence 10, Application US/09258371
; Patent No. 5986078
; GENERAL INFORMATION:
; APPLICANT: Garkavtsev, Igor
; APPLICANT: Riabowol, Karl
; TITLE OF INVENTION: DNA SEQUENCE ENCODING THE TUMOR
; TITLE OF INVENTION: SUPPRESSOR GENE INGI
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Burns, Doane, Swecker & Mathis
; STREET: 699 Prince Street
; CITY: Alexandria
; STATE: VA
; COUNTRY: USA
; ZIP: 22313-1404
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION NUMBER: US/09/258,371
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/751,230
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Mool, Leslie A.
; REGISTRATION NUMBER: 37,047
; REFERENCE/DOCKET NUMBER: 028722-144
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-854-7400
; TELEFAX: 415-854-8275
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 294 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-258-371-10

Query Match 85.0%; Score 34; DB 2; Length 294;
Best Local Similarity 71.4%; Pred. No. 14;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
Db 82 KRRMLHC 88

RESULT 3
US-08-751-230-10
; Sequence 10, Application US/08751230
; Patent No. 6117633
; GENERAL INFORMATION:
; APPLICANT: Garkavtsev, Igor
; APPLICANT: Riabowol, Karl
; TITLE OF INVENTION: DNA SEQUENCE ENCODING THE TUMOR
; TITLE OF INVENTION: SUPPRESSOR GENE INGI
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Burns, Doane, Swecker & Mathis
; STREET: 699 Prince Street
; CITY: Alexandria
; STATE: VA
; COUNTRY: USA
; ZIP: 22313-1404
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/751,230
; FILING DATE: 15-NOV-1996
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/569721
; FILING DATE: 08-DEC-1995
; ATTORNEY/AGENT INFORMATION:
; NAME: Mool, Leslie A.
; REGISTRATION NUMBER: 37,047
; REFERENCE/DOCKET NUMBER: 028722-144
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-854-7400
; TELEFAX: 415-854-8275
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 294 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-751-230-10

Query Match 85.0%; Score 34; DB 3; Length 294;
Best Local Similarity 71.4%; Pred. No. 14;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
Db 82 KRRMLHC 88

RESULT 4
US-09-499-082-10
; Sequence 10, Application US/09499082
; Patent No. 6143522
; GENERAL INFORMATION:
; APPLICANT: Helbing, Caren C.
; APPLICANT: Riabowol, Karl
; APPLICANT: Johnston, Randall N.
; APPLICANT: Garkavtsev, Igor
; TITLE OF INVENTION: METHODS OF MODULATING APOPTOSIS
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Burns, Doane, Swecker & Mathis
; STREET: 699 Prince Street
; CITY: Alexandria
; STATE: VA
; COUNTRY: USA
; ZIP: 22313-1404
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/499,082
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/08/828,158
; FILING DATE: 27-MAR-1997
; APPLICATION NUMBER: US 08/751230
; FILING DATE: 15-NOV-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/569721
; FILING DATE: 08-DEC-1995
; ATTORNEY/AGENT INFORMATION:
; NAME: Mool, Leslie A.
; REGISTRATION NUMBER: 37,047
; REFERENCE/DOCKET NUMBER: 028722-148

TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-854-7400
TELEFAX: 650-854-8275
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 294 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-499-082-10

Query Match 85.0%; Score 34; DB 4; Length 294;
Best Local Similarity 71.4%; Pred. No. 14;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|:|:|
Db 82 KRRMLHC 88

RESULT 5
US-09-258-372-10
Sequence 10, Application US/09258372
Patent No. 6238918
GENERAL INFORMATION:
APPLICANT: Garkavtsev, Igor
TITLE OF INVENTION: DNA SEQUENCE ENCODING THE TUMOR
TITLE OF INVENTION: SUPPRESSOR GENE INGI
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Burns, Doane, Swecker & Mathis
STREET: 699 Prince Street
CITY: Alexandria
STATE: VA
COUNTRY: USA
ZIP: 22313-1404
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/258,372
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/751,230
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Mool, Leslie A.
REGISTRATION NUMBER: 37,047
REFERENCE/DOCKET NUMBER: 028722-144
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-854-7400
TELEFAX: 415-854-8275
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 294 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-258-372-10

Query Match 85.0%; Score 34; DB 4; Length 294;
Best Local Similarity 71.4%; Pred. No. 14;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|:|:|
Db 82 KRRMLHC 88

RESULT 6
US-09-006-783A-3
Sequence 3, Application US/09006783A
Patent No. 6297366
GENERAL INFORMATION:
APPLICANT: Gudkov, Andrew V
APPLICANT: Garkavtsev, Igor
APPLICANT: Riabowol, Karl
TITLE OF INVENTION: p33/ING1 as a Mediator of p53 Signaling
TITLE OF INVENTION: Pathway
NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:
ADDRESSEE: McDonnell Boenhen Hulbert & Berghoff
STREET: 300 South Wacker Drive
CITY: Chicago
STATE: Illinois
COUNTRY: USA
ZIP: 60606
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/006,783A
FILING DATE: 15-JAN-1998
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: No. 6297366nan, Kevin E
REGISTRATION NUMBER: 35,303
REFERENCE/DOCKET NUMBER: 97,837
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-913-0001
TELEFAX: 312-913-0002
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 294 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-006-783A-3

Query Match 85.0%; Score 34; DB 4; Length 294;
Best Local Similarity 71.4%; Pred. No. 14;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|:|:|
Db 82 KRRMLHC 88

RESULT 7
US-09-659-166-2
Sequence 2, Application US/09659166
Patent No. 6355465
GENERAL INFORMATION:
APPLICANT: CREASY, CARETHA LEE
APPLICANT: TESTA, TANIA TAMSON
TITLE OF INVENTION: NOVEL COMPOUNDS
FILE REFERENCE: Gp-30218
CURRENT APPLICATION NUMBER: US/09/659,166
CURRENT FILING DATE: 2000-09-11
PRIOR APPLICATION NUMBER: UK 9921505.5
PRIOR FILING DATE: 1999-09-10
NUMBER OF SEQ ID NOS: 2
SOFTWARE: FastSeq for Windows Version 3.0
SEQ ID NO 2
LENGTH: 527
TYPE: PRT
ORGANISM: rattus
US-09-659-166-2

Query Match 82.5%; Score 33; DB 4; Length 527;

Best Local Similarity 71.4%; Pred. No. 37;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRILHC 7
Db 267 KNRIHC 273

RESULT 8
US-08-802-466-2
; Sequence 2, Application US/08802466
; Patent No. 5972606
; GENERAL INFORMATION:
; APPLICANT: Creasy, et al.
; TITLE OF INVENTION: HUMAN PROTEIN KINASE HOACF72
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: SmithKline Beecham Corporation
; STREET: 709 Swedeland Road
; CITY: King of Prussia
; STATE: PA
; COUNTRY: USA
; ZIP: 19406
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSeq for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/802,466
; FILING DATE: 09-Jul-1999
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/802,466
; FILING DATE: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: William T. Han
; REGISTRATION NUMBER: 34,344
; REFERENCE/DOCKET NUMBER: GH50002
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 610-270-5219
; TELEFAX: 610-270-4026
; TELEX: <Unknown>
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 528 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; CLASSIFICATION: 435
; SEQUENCE DESCRIPTION: SEQ ID NO: 2:
US-08-802-466-2

Query Match 82.5%; Score 33; DB 2; Length 528;
Best Local Similarity 71.4%; Pred. No. 37;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRILHC 7
Db 268 KNRIHC 274

RESULT 9
US-09-350-484-2
; Sequence 2, Application US/09350484
; Patent No. 6159716
; GENERAL INFORMATION:
; APPLICANT: Creasy, et al.
; TITLE OF INVENTION: HUMAN PROTEIN KINASE HOACF72
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: SmithKline Beecham Corporation
; STREET: 709 Swedeland Road
; CITY: King of Prussia

Query Match 82.5%; Score 33; DB 2; Length 528;
Best Local Similarity 71.4%; Pred. No. 37;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRILHC 7
Db 268 KNRIHC 274

RESULT 10
US-08-892-770-6
; Sequence 6, Application US/08892770
; Patent No. 5962670
; GENERAL INFORMATION:
; APPLICANT: Walling, Linda L.
; APPLICANT: Pautot, Veronique
; APPLICANT: Gu, Yong-Qiang
; APPLICANT: Chao, Wun Shaw
; TITLE OF INVENTION: Improved Promoters for Enhancing Plant
; TITLE OF INVENTION: Productivity
; NUMBER OF SEQUENCES: 13
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/892,770
; FILING DATE: 15-JUL-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Quine, Jonathan A.
; REGISTRATION NUMBER: P-41,261

; REFERENCE/DOCKET NUMBER: 023070-072100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 565 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
; NAME/KEY: Protein
; LOCATION: 1..565
; OTHER INFORMATION: /note= "deduced partial protein sequence
; OTHER INFORMATION: of acidic leucine aminopeptidase 2
; OTHER INFORMATION: (Lapa2) from tomato"
; US-08-892-770-6

Query Match 80.0%; Score 32; DB 2; Length 565;
Best Local Similarity 83.3%; Pred. No. 63;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRILHC 7
|||:|
Db 42 KRIVHC 47

RESULT 11
US-08-892-770-5
; Sequence 5, Application US/08892770
; Patent No. 5962670
; GENERAL INFORMATION:
; APPLICANT: Walling, Linda L.
; APPLICANT: Pautot, Veronique
; APPLICANT: Gu, Yong-Qiang
; APPLICANT: Chao, Wu Shaw
; TITLE OF INVENTION: Improved Promoters for Enhancing Plant
; PRODUCTIVITY
; NUMBER OF SEQUENCES: 13
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/892,770
; FILING DATE: 15-JUL-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Quine, Jonathan A.
; REGISTRATION NUMBER: P-41,261
; REFERENCE/DOCKET NUMBER: 023070-072100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0300
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 5:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 571 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
; NAME/KEY: Protein
; LOCATION: 1..571

; OTHER INFORMATION: /note= "deduced full-length protein
; OTHER INFORMATION: sequence of acidic leucine
; OTHER INFORMATION: aminopeptidase (Lapa1) protein from
; OTHER INFORMATION: tomato"
; US-08-892-770-5

Query Match 80.0%; Score 32; DB 2; Length 571;
Best Local Similarity 83.3%; Pred. No. 64;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRILHC 7
|||:|
Db 48 KRIVHC 53

RESULT 12
US-07-822-966B-4
; Sequence 4, Application US/07822966B
; Patent No. 5498597
; GENERAL INFORMATION:
; APPLICANT: Steven J. Burakoff
; APPLICANT: Stuart L. Schreiber
; APPLICANT: Barbara E. Bierer
; TITLE OF INVENTION: FKBP-13, AN FK506-BINDING
; TITLE OF INVENTION: IMMUNOPHILIN
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson P.C.
; STREET: 225 Franklin Street
; CITY: Boston
; STATE: Massachusetts
; COUNTRY: U.S.A.
; ZIP: 02110-2804
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
; COMPUTER: IBM PS/2 Model 502 or 55SX
; OPERATING SYSTEM: IBM P.C. DOS (Version 3.30)
; SOFTWARE: WordPerfect (Version 5.0)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/822,966B
; FILING DATE: January 17, 1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Fraser, Janis K.
; REGISTRATION NUMBER: 34,819
; REFERENCE/DOCKET NUMBER: 00530/052001
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (617) 542-5070
; TELEFAX: (617) 542-8906
; TELEX: 200154
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 40
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; US-07-822-966B-4

Query Match 77.5%; Score 31; DB 1; Length 40;
Best Local Similarity 71.4%; Pred. No. 8.4;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRILHC 7
|||:|
Db 14 KKRVDHC 20

RESULT 13
US-08-336-618-19
; Sequence 19, Application US/08336618
; Patent No. 5763590
; GENERAL INFORMATION:
; APPLICANT: Peattie, Debra A.
; APPLICANT: Harding, Matthew W.

```
/
/ APPLICANT: Livingston, David J.
/ TITLE OF INVENTION: ISOLATION OF AN MR 52,000 FK506 BINDING
/ TITLE OF INVENTION: PROTEIN AND MOLECULAR CLONING OF A CORRESPONDING HUMAN
/ TITLE OF INVENTION: CDNA
/ NUMBER OF SEQUENCES: 32
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Hamilton, Brook, Smith and Reynolds, P.C.
/ STREET: Two Militia Drive
/ CITY: Lexington
/ STATE: Massachusetts
/ COUNTRY: U.S.A.
/ ZIP: 02173
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: PatentIn Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/336,618
/ FILING DATE: 09-NOV-1994
/ CLASSIFICATION: 435
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: 07/963,325
/ FILING DATE: 16-OCT-1992
/ APPLICATION NUMBER: US 07/777,752
/ FILING DATE: 11-OCT-1991
/ PRIOR APPLICATION DATA: PCT/
/ FILING DATE: 09-OCT-1992
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Granahan, Patricia
/ REGISTRATION NUMBER: 32,227
/ REFERENCE/DOCKET NUMBER: VP191-06A
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-861-6240
/ TELEFAX: 617-861-9340
/ INFORMATION FOR SEQ ID NO: 19:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 88 amino acids
/ TYPE: amino acid
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ US-08-336-618-19

Query Match 77.5%; Score 31; DB 1; Length 88;
Best Local Similarity 71.4%; Pred. No. 18;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRILHC 7
Db 14 KKRVDHC 20

RESULT 14
PCT-US92-03993-5
/ Sequence 5, Application PC/TUS9203993
/ GENERAL INFORMATION:
/ APPLICANT: Harding, Matthew W.
/ TITLE OF INVENTION: FKBP: A NOVEL PROLYL ISOMERASE AND
/ TITLE OF INVENTION: RAPAMYCIN/FK506 BINDING PROTEIN
/ NUMBER OF SEQUENCES: 10
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Hamilton, Brook, Smith & Reynolds, P.C.
/ STREET: Two Militia Drive
/ CITY: Lexington
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02173
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: PatentIn Release #1.0, Version #1.25
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/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: PCT/US92/03993
/ FILING DATE: 19920507
/ CLASSIFICATION:
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/697,113
/ FILING DATE: 08-MAY-1991
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Granahan, Patricia
/ REGISTRATION NUMBER: 32,227
/ REFERENCE/DOCKET NUMBER: VP191-05A PCT
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: (617) 861-6240
/ TELEFAX: (617) 861-9540
/ INFORMATION FOR SEQ ID NO: 5:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 99 amino acids
/ TYPE: AMINO ACID
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ PCT-US92-03993-5

Query Match 77.5%; Score 31; DB 5; Length 99;
Best Local Similarity 71.4%; Pred. No. 20;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRILHC 7
Db 14 KKRVDHC 20

RESULT 15
US-07-822-966B-6
/ Sequence 6, Application US/07822966B
/ Patent No. 5498597
/ GENERAL INFORMATION:
/ APPLICANT: Steven J. Burakoff
/ APPLICANT: Stuart L. Schreiber
/ APPLICANT: Barbara E. Blierer
/ TITLE OF INVENTION: FKBP-13, AN FK506-BINDING
/ TITLE OF INVENTION: IMMUNOPHILIN
/ NUMBER OF SEQUENCES: 6
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Fish & Richardson P.C.
/ STREET: 225 Franklin Street
/ CITY: Boston
/ STATE: Massachusetts
/ COUNTRY: U.S.A.
/ ZIP: 02110-2804
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: 3 5" Diskette, 1.44 Mb
/ COMPUTER: IBM PS/2 Model 50Z or 55SX
/ OPERATING SYSTEM: IBM P.C. DOS (Version 3.30)
/ SOFTWARE: WordPerfect (Version 5.0)
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/07/822,966B
/ FILING DATE: January 17, 1992
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Fraser, Janis K.
/ REGISTRATION NUMBER: 34,819
/ REFERENCE/DOCKET NUMBER: 00530/052001
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: (617) 542-5070
/ TELEFAX: (617) 542-8906
/ TELEX: 200154
/ INFORMATION FOR SEQ ID NO: 6:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 141 amino acids
/ TYPE: amino acid
/ STRANDEDNESS: not relevant
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ US-07-822-966B-6
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Query Match 77.5%; Score 31; DB 1; Length 141;
Best Local Similarity 71.4%; Pred. No. 27;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
| | | : | |
Db 35 KKRVDHC 41

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OM protein - protein search, using sw model

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Title: US-09-606-129A-34
Perfect score: 40
Sequence: 1 KKRILHC 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

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Post-processing: Minimum Match 0%
Maximum Match 100%
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	38	95.0	285	21	Arabidopsis thalia
2	36	90.0	94	21	Murine INGBl isofo
3	36	90.0	279	21	Murine P37INGl pol
4	35	87.5	508	21	Arabidopsis thalia
5	35	87.5	533	21	Arabidopsis thalia
6	35	87.5	564	21	Arabidopsis thalia
7	34	85.0	94	21	Human INGBl isofo
8	34	85.0	128	20	Amino acid sequenc
9	34	85.0	235	22	Amino acid sequenc
10	34	85.0	279	21	Human P37INGl. HO
11	34	85.0	279	22	Tumour suppressor

12	34	85.0	279	22	AAB84698	Amino acid sequenc
13	34	85.0	294	18	AAW19119	Tumour suppressor
14	34	85.0	294	19	AAW79675	Human p33INGl poly
15	34	85.0	294	20	AAW03244	Amino acid sequenc
16	34	85.0	294	22	AAB84697	Amino acid sequenc
17	34	85.0	455	22	ABW71982	Drosophila melanog
18	33	82.5	82	22	AAW87522	Human immune/haema
19	33	82.5	141	21	AAW53247	Human colon cancer
20	33	82.5	350	22	ABW50167	Human transcriptio
21	33	82.5	398	22	ABW62446	Drosophila melanog
22	33	82.5	528	19	AAW64559	Human protein kina
23	33	82.5	528	22	AAW02011	Human YAK1 (hYAK1)
24	33	82.5	549	21	AAW68781	Amino acid sequenc
25	33	82.5	882	22	AAG63551	A human alpha-2 ma
26	33	82.5	899	22	AAG63550	A human alpha-2 ma
27	33	82.5	912	22	AAG63549	A human alpha-2 ma
28	33	82.5	1475	22	ABG21224	Novel human diagno
29	33	82.5	1508	22	AAG63548	A human alpha-2 ma
30	32	80.0	83	22	ABG14241	Novel human diagno
31	32	80.0	126	22	ABG11998	Novel human diagno
32	32	80.0	158	21	AAW25386	Pinus radiata cell
33	32	80.0	565	20	AAW96316	Acidic leucine ami
34	32	80.0	571	20	AAW96315	Acidic leucine ami
35	31	77.5	40	17	AAW93552	Bovine FKBP-13 imm
36	31	77.5	83	22	AAG76114	Human colon cancer
37	31	77.5	93	22	ABG20736	Novel human diagno
38	31	77.5	99	13	AAW28979	Bovine RPKBP. BOS
39	31	77.5	104	21	AAW03758	Human secreted pro
40	31	77.5	122	22	AAW88444	Human immune/haema
41	31	77.5	137	22	AAW87656	Bovine mammary tis
42	31	77.5	141	17	AAW93551	Human FKBP-13 immu
43	31	77.5	182	22	AAW31050	Novel human secret
44	31	77.5	504	18	AAW36140	Bovine P58 protein
45	31	77.5	504	22	ABW09790	Novel human diagno

ALIGNMENTS

RESULT 1

AAW28710
ID AAG28710 standard; Protein: 285 AA.

XX AC AAG28710;

XX DT 17-OCT-2000 (first entry)

XX Arabidopsis thaliana protein fragment SEQ ID NO: 34031.

XX Protein identification; signal transduction pathway; metabolic pathway;
XX hybridisation assay; genetic mapping; gene expression control; promoter;
XX termination sequence.

XX Arabidopsis thaliana.

XX PN EPI033405-A2.

XX PD 06-SEP-2000.

XX PF 25-FEB-2000; 2000EP-0301439.

XX PR 25-FEB-1999; 99US-0121825.

XX PR 05-MAR-1999; 99US-0123180.

XX PR 09-MAR-1999; 99US-0123548.

XX PR 23-MAR-1999; 99US-0125788.

XX PR 25-MAR-1999; 99US-0126264.

XX PR 29-MAR-1999; 99US-0126785.

XX PR 01-APR-1999; 99US-0127462.

XX PR 06-APR-1999; 99US-0128234.

XX PR 08-APR-1999; 99US-0128714.

XX PR 16-APR-1999; 99US-0129845.

XX PR 19-APR-1999; 99US-0130077.

XX PR 21-APR-1999; 99US-0130449.

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Query Match 95.0%; Score 38; DB 21; Length 285;

Best Local Similarity 85.7%; Pred. No. 10;

Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
 Db 13 KKRLLHC 19

RESULT 2

AAAY97243
 ID AAAY97243 standard; Protein: 94 AA.

XX AC AAAY97243;

XX DT 19-DEC-2000 (first entry)

XX DE Murine ING1 isoform N-terminal peptide.

XX p53; tumour; cancer; detection; antibody; hybridisation; exon 1b;
 KW ING1; ing1; p33ING1; p37ING1; oncogene; gene therapy; diagnosis;
 KW proliferation disorder; transformation; transformed cell; mouse.

XX OS Mus musculus.

XX PN WO200046370-A1.

XX PD 10-AUG-2000.

XX PF 04-FEB-2000; 2000WO-US02959.

XX PR 04-FEB-1999; 99US-0118941.

XX PA (UNII) UNIV ILLINOIS FOUND.

XX PI Gudkov A, Zeremski M, Gurova KV, Grigorian IA;

XX DR WPI; 2000-491278/43.

XX PT Detecting nucleic acid encoding exon 1b of ing1, useful for diagnosing
 PT and treating cancer, comprises contacting sample with isolated nucleic
 PT acid comprising sequence of exon 1b and detecting hybridized products

XX PS Claim 6; Fig 7a; 134pp; English.

XX CC Mutations in or loss of the p53 gene occur in more than 50% of
 CC human tumours and tumour cell lines, but functional inactivation of
 CC the p53 pathway occurs in a much larger proportion of tumours. In
 CC many cases the mechanism of functional inactivation of the p53 gene
 CC remains unknown but p53 has been found to act in cooperation with

CC ING1. Functional cooperation between ING1 and p53 suggested that
 CC ING1 encoded a tumour suppressor protein that functioned within the
 CC p53 pathway. This data suggested a possible role for ING1 in head
 CC and neck cancers and chromosomal location of the ING1 placed it
 CC within a region that is frequently rearranged in head and neck
 CC cancers. Large scale analysis of tumours involving ING1 has not
 CC revealed mutations in ING1 nor significant variations in its
 CC expression suggesting that ING1 was not a useful gene to study in
 CC cancer etiology. However, alternative initiation exons of the ING1
 CC gene, each having their own promoter have been discovered.
 CC Expression of one promoter (1a) produces a protein identical to
 CC ING1. Expression of a second promoter (1b) produces a protein having
 CC an identical C-terminal fragment to ING1 but an additional 104
 CC N-terminal amino acids. The newly discovered protein has been
 CC designated p37ING1 (Wild type: p33ING1). p37ING1 has the
 CC characteristics of an oncogene. When overexpressed in cells (even
 CC those expressing wild type p53) p37ING1 is able to cause
 CC proliferation or transformation of those cells. Thus detecting a
 CC nucleic acid encoding exon 1b of ING1 by hybridisation with an
 CC isolated nucleic acid having the sequence of exon 1b of ING1
 CC or its antisense sequence can identify individuals expressing the
 CC oncogenic form of ING1. Novel peptide sequences taken from the 104
 CC N-terminal peptide of p37ING1 can also be used to raise antibodies
 CC that can also be used in detection methods for the p37ING1 variant.
 CC The polypeptides may be useful in gene therapy for treatment of cell
 CC proliferation disorders, especially cancers and for diagnosing and
 CC studying cancers.

XX SQ Sequence 94 AA;

Query Match 90.0%; Score 36; DB 21; Length 94;

Best Local Similarity 71.4%; Pred. No. 8.8;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRILHC 7
 Db 67 KRRVLHC 73

RESULT 3

AAAY97242
 ID AAAY97242 standard; Protein: 279 AA.

XX AC AAAY97242;

XX DT 19-DEC-2000 (first entry)

XX DE Murine p37ING1 polypeptide.

XX p53; tumour; cancer; detection; antibody; hybridisation; exon 1b;
 KW ING1; ing1; p33ING1; p37ING1; oncogene; gene therapy; diagnosis;
 KW proliferation disorder; transformation; transformed cell; mouse.

XX OS Mus musculus.

XX PN WO200046370-A1.

XX PD 10-AUG-2000.

XX PF 04-FEB-2000; 2000WO-US02959.

XX PR 04-FEB-1999; 99US-0118941.

XX PA (UNII) UNIV ILLINOIS FOUND.

XX PI Gudkov A, Zeremski M, Gurova KV, Grigorian IA;

XX DR WPI; 2000-491278/43.

XX DR N-PSDB: AAA53790.

XX PT Detecting nucleic acid encoding exon 1b of ing1, useful for diagnosing
 PT and treating cancer, comprises contacting sample with isolated nucleic
 PT acid comprising sequence of exon 1b and detecting hybridized products

XX Disclosure; Fig 12; 134pp; English.
 XX Mutations in or loss of the p53 gene occur in more than 50% of
 CC human tumours and tumour cell lines, but functional inactivation of
 CC the p53 pathway occurs in a much larger proportion of tumours. In
 CC many cases the mechanism of functional inactivation of the p53 gene
 CC remains unknown but p53 has been found to act in cooperation with
 CC INK1. Functional cooperation between INK1 and p53 suggested that
 CC INK1 encoded a tumour suppressor protein that functioned within the
 CC p53 pathway. This data suggested a possible role for INK1 in head
 CC and neck cancers and chromosomal location of the INK1 placed it
 CC within a region that is frequently rearranged in head and neck
 CC cancers. Large scale analysis of tumours involving INK1 has not
 CC revealed mutations in INK1 nor significant variations in its
 CC expression suggesting that INK1 was not a useful gene to study in
 CC cancer etiology. However, alternative initiation exons of the INK1
 CC gene, each having their own promoter have been discovered..
 CC Expression of one promoter (1a) produces a protein identical to
 CC INK1. Expression of a second promoter (1b) produces a protein having
 CC an identical C-terminal fragment to INK1 but an additional 104
 CC N-terminal amino acids. The newly discovered protein has been
 CC designated p37ING1 (Wild type: p33ING1). p37ING1 has the
 CC characteristics of an oncogene. When overexpressed in cells (even
 CC those expressing wild type p53) p37ING1 is able to cause
 CC proliferation or transformation of those cells. Thus detecting a
 CC nucleic acid encoding exon 1b of INK1 by hybridisation with an
 CC isolated nucleic acid having the sequence of exon 1b of INK1
 CC or its antisense sequence can identify individuals expressing the
 CC oncogenic form of INK1. Novel peptide sequences taken from the 104
 CC N-terminal peptide of p37ING1 can also be used to raise antibodies
 CC that can also be used in detection methods for the p37ING1 variant.
 CC The polypeptides may be useful in gene therapy for treatment of cell
 CC proliferation disorders, especially cancers and for diagnosing and
 CC studying cancers.
 XX
 SQ Sequence 279 AA;
 Query Match 90.0%; Score 36; DB 21; Length 279;
 Best Local Similarity 71.4%; Pred. No. 24;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 KKRILHC 7
 Db 67 KRRVLHC 73
 RESULT 4
 AAG48146
 ID AAG48146 standard; Protein: 508 AA.
 XX
 AC AAG48146;
 XX
 DT 18-OCT-2000 (first entry)
 XX
 DE Arabidopsis thaliana protein fragment SEQ ID NO: 60770.
 XX
 KW Protein identification; signal transduction pathway; metabolic pathway;
 KW hybridisation assay; genetic mapping; gene expression control; promoter;
 KW termination sequence.
 XX
 XX Arabidopsis thaliana.
 PN EP1033405-A2.
 XX
 PD 06-SEP-2000.
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 PF 25-FEB-2000; 2000EP-0301439.
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 XX 25-FEB-1999; 99US-0121825.
 PR 05-MAR-1999; 99US-0123380.
 PR 09-MAR-1999; 99US-0123348.
 PR 23-MAR-1999; 99US-0125788.
 PR
 25-MAR-1999; 99US-0126264.
 29-MAR-1999; 99US-0126785.
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PR 23-JUL-1999; 99US-0145145.
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Db 236 KRRLLHC 242

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XX DT 18-OCT-2000 (first entry)
XX DE Arabidopsis thaliana protein fragment SEQ ID NO: 60769.
XX Protein identification; signal transduction pathway; metabolic pathway;
KW hybridisation assay; genetic mapping; gene expression control; promoter;
KW termination sequence.
XX OS Arabidopsis thaliana.
XX EP1033405-A2.
XX PD 06-SEP-2000.
XX PF 25-FEB-2000; 2000EP-0301439.
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Best Local Similarity 71.4%  Pred. No. 70;
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XX XX
DT 18-OCT-2000 (first entry)
DE Arabidopsis thaliana protein fragment SEQ ID NO: 60768.
XX KW Protein identification; signal transduction pathway; metabolic pathway;
KW hybridisation assay; genetic mapping; gene expression control; promoter;
KW termination sequence.
XX OS Arabidopsis thaliana.
XX EP1033405-A2.
XX PD 06-SEP-2000.
XX PF 25-FEB-2000; 2000EP-0301439.
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PR 29-OCT-1999; 99US-0162142.

Query Match 87.5%; Score 35; DB 21; Length 564;
Best Local Similarity 71.4%; Pred. No. 73;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

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DB 292 KKRLLHC 298

RESULT 7

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ID AAY97245 standard; Protein; 94 AA.

XX AC AAY97245;

XX DT 19-DEC-2000 (first entry)

XX DE Human INGB1 isoform N-terminal peptide.

XX KW p53; tumour; cancer; detection; antibody; hybridisation; exon 1b;
KW INGI1; ing1; p31ING1; p37ING1; oncogene; gene therapy; diagnosis;
KW proliferation disorder; transformation; transformed cell; mouse.

XX OS Homo sapiens.

XX PN WO200046370-A1.

XX PD 10-AUG-2000.

XX PF 04-FEB-2000; 2000WO-US02959.

XX PR 04-FEB-1999; 99US-0118941.

XX PA (UNII) UNIV ILLINOIS FOUND.

XX PI Gudkov A, Zeremski M, Gurova KV, Grigorian IA;

XX WPI; 2000-491278/43.

XX PT Detecting nucleic acid encoding exon 1b of ing1, useful for diagnosing
PT and treating cancer, comprises contacting sample with isolated nucleic
PT acid comprising sequence of exon 1b and detecting hybridized products

XX PS ClalM 26; Figure 7a; 134pp; English.

XX CC Mutations in or loss of the p53 gene occur in more than 50% of
CC human tumours and tumour cell lines, but functional inactivation of
CC the p53 pathway occurs in a much larger proportion of tumours. In
CC many cases the mechanism of functional inactivation of the p53 gene
CC remains unknown but p53 has been found to act in cooperation with
CC INGI1. Functional cooperation between INGI1 and p53 suggested that
CC INGI1 encoded a tumour suppressor protein that functioned within the
CC p53 pathway. This data suggested a possible role for INGI1 in head
CC and neck cancers and chromosomal location of the INGI1 placed it
CC within a region that is frequently rearranged in head and neck
CC cancers. Large scale analysis of tumours involving INGI1 has not

CC revealed mutations in INGI nor significant variations in its
 CC expression suggesting that INGI was not a useful gene to study in
 CC cancer etiology. However, alternative initiation exons of the ingl
 CC gene, each having their own promoter have been discovered.
 CC Expression of one promoter (la) produces a protein identical to
 CC INGI. Expression of a second promoter (lb) produces a protein having
 CC an identical C-terminal fragment to INGI but an additional 104
 CC N-terminal amino acids. The newly discovered protein has been
 CC designated p37ING1 (Wild type: p33ING1). p37ING1 has the
 CC characteristics of an oncogene. When overexpressed in cells (even
 CC those expressing wild type p53) p37ING1 is able to cause
 CC proliferation or transformation of those cells. Thus detecting a
 CC nucleic acid encoding exon lb of ingl by hybridisation with an
 CC isolated nucleic acid having the sequence of exon lb of ingl
 CC or its antisense sequence can identify individuals expressing the
 CC oncogenic form of ingl. Novel peptide sequences taken from the 104
 CC N-terminal peptide of p37ING1 can also be used to raise antibodies
 CC that can also be used in detection methods for the p37ING1 variant.
 CC The polypeptides may be useful in gene therapy for treatment of cell
 CC proliferation disorders, especially cancers and for diagnosing and
 CC studying cancers.

SQ Sequence 94 AA;

Query Match 85.0%; Score 34; DB 21; Length 94;
 Best Local Similarity 71.4%; Pred. No. 22;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
 |:|:|:|
 Db 67 KRRMLHC 73

RESULT 8
 AAY03245

ID AAY03245 standard; Protein: 128 AA.

XX AAY03245;

DT 26-AUG-1999 (first entry)

DE Amino acid sequence of the human p28-ING1 protein.

KW Human; p33-ING1 protein; growth regulation; apoptosis; DNA damage;
 KW inhibition; anchorage independent growth; cytotoxic drug; cancer;
 KW transcriptional activation; immortal cell line; p28-ING1 protein.

XX Homo sapiens.

XX Key Location/Qualifiers

FT FT MISC_Difference 59..269

FT /note= "p26-ING1 fragment"

XX WO9916790-A1.

XX 08-APR-1999.

XX 24-SEP-1998; 98WO-US18179.

XX 14-JAN-1998; 98US-0006783.

XX 26-SEP-1997; 97US-0060138.

XX (UNII) UNIV ILLINOIS BOARD OF TRUSTEES.
 XX (UYTE-) UNIV TECHNOLOGIES INT INC.

PI Garkavtsev I, Gudkov A, Riabowol K;

XX WPI; 1999-263685/22.

XX Use of p33-ING1 peptides

PS Example 8; Page 61; 64pp; English.

CC This is the amino acid sequence of the human p28-ING1 protein,
 CC used in the method of the invention, involving the human p33-ING1
 CC protein. The INGI gene encodes p33-ING1 which can be used to
 CC modulate the activity of, isolate or detect p53. Expression of the
 CC INGI and p53 genes in a mammalian cell results in normal growth
 CC regulation anchorage-dependent growth and apoptosis as a response
 CC to irreversible DNA damage and other cellular insult. Inhibition of
 CC expression of either gene results in a loss of cellular growth
 CC control, anchorage independent growth, inhibition of apoptosis
 CC and resistance to radiation and cytotoxic drugs. The p33-ING1 is a
 CC component of the p53 signalling pathway that cooperates with p53 in
 CC negative regulation of cell proliferation by modulating p53 dependent
 CC transcriptional activation. Biological function of p53 signalling
 CC pathway can therefore be regulated (both enhanced or suppressed) by
 CC modulating p33-ING1 activity. The modulation of p33-ING1 activity can
 CC be used for the stimulation or restoration of the p53 pathway in
 CC anti cancer therapy or for the suppression of the p53 pathway to
 CC defend sensitive tissues from genotoxic stress or for the generation
 CC of immortal cell lines.

XX Sequence 128 AA;

Query Match 85.0%; Score 34; DB 20; Length 128;
 Best Local Similarity 71.4%; Pred. No. 29;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7
 |:|:|:|
 Db 67 KRRMLHC 73

RESULT 9
 AAB84700

ID AAB84700 standard; Protein: 235 AA.

XX AAB84700;

DT 17-SEP-2001 (first entry)

DE Amino acid sequence of a human cancer associated antigen.

XX Cancer associated antigen; INGI; tumour suppressor; cancer; vaccine.

XX Homo sapiens.

XX WO200147959-A2.

XX 05-JUL-2001.

XX 29-NOV-2000; 2000WO-US42334.

XX 30-NOV-1999; 99US-0451739.

XX 24-OCT-2000; 2000US-0602362.

XX (LUDW-) LUDWIG INST CANCER RES.
 XX (SLOK) SLOAN KETTERING INST CANCER RES.
 XX (CORR) CORNELL RES FOUND INC.

PI Jager D, Stockert E, Scanlan M, Knuth A, Old L, Gure A, Chen Y;
 XX WPI; 2001-441706/47.

XX Isolated cancer associated nucleic acid molecule identified by SEREX
 PT (serological identification of antigens by recombinant expression
 PT cloning) technique, useful in nucleic acid based therapies to treat
 PT cancer -

XX Claim 83; Page 47-48; 62pp; English.

XX The present sequence represents a human cancer associated antigen.

CC The sequence is a variant of the INGI gene, which is a tumour
 CC suppressor gene candidate. The cancer associated antigen polynucleotides
 CC and polypeptides are useful for screening for the possible presence of

CC a pathological condition in a subject such as cancer. The cancer
 CC associated antigen polypeptides are useful for producing vaccines.
 XX
 SQ Sequence 235 AA;

Query Match 85.0%; Score 34; DB 22; Length 235;
 Best Local Similarity 71.4%; Pred. No. 51;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

OY 1 KKRILHC 7
 |:|:|
 Db 23 KRRMLHC 29

RESULT 10
 AAY97244
 ID AAY97244 standard; Protein; 279 AA.

AC AAY97244;
 DT 19-DEC-2000 (first entry)
 XX Human P37ING1.

XX p53; tumour; cancer; detection; antibody; hybridisation; exon 1b;
 KW ING1; ing1; p33ING1; p37ING1; oncogene; gene therapy; diagnosis;
 KW proliferation disorder; transformation; transformed cell; mouse.
 XX
 OS Homo sapiens.

XX WO200046370-A1.
 XX 10-AUG-2000.
 XX 04-FEB-2000; 2000WO-US02959.
 XX 04-FEB-1999; 99US-0118941.
 XX (UNII) UNIV ILLINOIS FOUND.
 XX Gudkov A, Zeremski M, Gurova KV, Grigorian IA;
 PI WPI; 2000-491278/43.
 DR N-PSDB; AAA53792.

XX Detecting nucleic acid encoding exon 1b of ing1, useful for diagnosing
 PT and treating cancer, comprises contacting sample with isolated nucleic
 PT acid comprising sequence of exon 1b and detecting hybridized products
 XX
 PS Disclosure; Fig 7a; 134pp; English.

CC Mutations in or loss of the p53 gene occur in more than 50% of
 CC human tumours and tumour cell lines, but functional inactivation of
 CC the p53 pathway occurs in a much larger proportion of tumours. In
 CC many cases the mechanism of functional inactivation of the p53 gene
 CC remains unknown but p53 has been found to act in cooperation with
 CC ING1. Functional cooperation between ING1 and p53 suggested that
 CC ING1 encoded a tumour suppressor protein that functioned within the
 CC p53 pathway. This data suggested a possible role for ING1 in head
 CC and neck cancers and chromosomal location of the ING1 placed it
 CC within a region that is frequently rearranged in head and neck
 CC cancers. Large scale analysis of tumours involving ING1 has not
 CC revealed mutations in ING1 nor significant variations in its
 CC expression suggesting that ING1 was not a useful gene to study in
 CC cancer etiology. However, alternative initiation exons of the ing1
 CC gene, each having their own promoter have been discovered.
 CC Expression of one promoter (1a) produces a protein identical to
 CC ING1. Expression of a second promoter (1b) produces a protein having
 CC an identical C-terminal fragment to ING1 but an additional 104
 CC N-terminal amino acids. The newly discovered protein has been
 CC designated p37ING1 (wild type: p33ING1). p37ING1 has the
 CC characteristics of an oncogene. When overexpressed in cells (even
 CC those expressing wild type p53) p37ING1 is able to cause

CC proliferation or transformation of those cells. Thus detecting a
 CC nucleic acid encoding exon 1b of ing1 by hybridisation with an
 CC isolated nucleic acid having the sequence of exon 1b of ing1
 CC or its antisense sequence can identify individuals expressing the
 CC oncogenic form of ing1. Novel peptide sequences taken from the 104
 CC N-terminal peptide of p37ING1 can also be used to raise antibodies
 CC that can also be used in detection methods for the p37ING1 variant.
 CC The polypeptides may be useful in gene therapy for treatment of cell
 CC proliferation disorders, especially cancers and for diagnosing and
 CC studying cancers.

XX Sequence 279 AA;

Query Match 85.0%; Score 34; DB 21; Length 279;
 Best Local Similarity 71.4%; Pred. No. 60;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

OY 1 KKRILHC 7
 |:|:|
 Db 67 KRRMLHC 73

RESULT 11
 AAE06676
 ID AAE06676 standard; Protein; 279 AA.

XX AAE06676;
 XX 23-OCT-2001 (first entry)

XX Tumour suppressor homologue protein, p33ING1.

XX Tumour suppressor; p47ING3; cell proliferation; cellular aging;
 KW anchorage dependence; apoptosis; tumour; cancer; gene therapy; p33ING1.

XX Unidentified.

XX WO200159114-A2.

XX 16-AUG-2001.

XX 09-FEB-2001; 2001WO-US04425.

XX 09-FEB-2000; 2000US-0181292.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Harris CC, Nagashima M;

XX WPI; 2001-488975/53.

XX New tumor suppressor protein p47ING3 for the diagnosis and treatment of
 PT tumors -

PS Example 1; Page 78-79; 80pp; English.

CC The present sequence is a tumour suppressor homologue protein, p33ING1
 CC which is homologous to human tumour suppressor protein, p47ING3. The
 CC tumour suppressors of the invention are involved in the regulation of
 CC cell proliferation and in the control of cellular aging, anchorage
 CC dependence and apoptosis. The tumour suppressor protein, p47ING3,
 CC nucleic acids encoding it and antibodies against it are useful for
 CC diagnosis, prevention and treatment of tumours and cancers. The p47ING3
 CC DNA is also used in gene therapy.

XX Sequence 279 AA;

Query Match 85.0%; Score 34; DB 22; Length 279;
 Best Local Similarity 71.4%; Pred. No. 60;
 Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

OY 1 KKRILHC 7
 |:|:|

Db 67 KRRMLHC 73

RESULT 12

AA884698
ID AAB84698 standard; Protein: 279 AA.

XX AC AAB84698;

XX DT 17-SEP-2001 (first entry)

XX DE Amino acid sequence of a human cancer associated antigen.

XX KW Cancer associated antigen; INGI1; tumour suppressor; cancer; vaccine.

XX OS Homo sapiens.

XX FH Key Location/Qualifiers

FT FT Misc-difference 123 /note= "Val encoded by GCG"

FT FT Misc-difference 129 /note= "Val encoded by GCT"

FT FT Misc-difference 135 /note= "Asn encoded by AAA"

FT FT Misc-difference 137 /note= "Asp encoded by GAG"

FT FT Misc-difference 139 /note= "Val encoded by GCA"

FT FT Misc-difference 142 /note= "Ser encoded by GCT"

XX PN WO200147959-A2.

XX PD 05-JUL-2001.

XX PF 29-NOV-2000; 2000WO-US42334.

XX PR 30-NOV-1999; 99US-0451739.

XX PR 24-OCT-2000; 2000US-0602362.

XX PA (LUDW-) LUDWIG INST CANCER RES.

XX PA (SLOK) SLOAN KETTERING INST CANCER RES.

XX PA (CORR) CORNELL RES FOUND INC.

XX PI Jager D, Stockert E, Scanlan M, Knuth A, Old L, Gure A, Chen Y;

XX DR WPI; 2001-441706/47.

XX DR N-PSDB; AAH28478.

XX PT Isolated cancer associated nucleic acid molecule identified by SEREX

XX PT (serological identification of antigens by recombinant expression

XX PT cloning) technique, useful in nucleic acid based therapies to treat

XX PT cancer -

XX PS Claim 83; Page 45-46; 62pp; English.

XX CC The present sequence represents a human cancer associated antigen.

XX CC The sequence is a variant of the INGI1 gene, which is a tumour

XX CC suppressor gene candidate. The cancer associated antigen polynucleotides

XX CC and polypeptides are useful for screening for the possible presence of

XX CC a pathological condition in a subject such as cancer. The cancer

XX CC associated antigen polypeptides are useful for producing vaccines.

XX SQ Sequence 279 AA;

Query Match 85.0%; Score 34; DB 22; Length 279;

Best Local Similarity 71.4%; Pred. No. 60;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRILHC 7

Db 67 KRRMLHC 73

RESULT 13

AAW19119

ID AAW19119 standard; Protein: 294 AA.

XX AC AAW19119;

XX DT 27-AUG-1997 (first entry)

XX DE Tumour suppressor protein p33ING1.

XX KW Tumour suppressor protein; p33ING1; breast cancer; brain cancer;

XX KW diagnosis; therapy.

XX OS Homo sapiens.

XX PN WO9721809-A1.

XX PD 19-JUN-1997.

XX PF 06-DEC-1996; 96WO-CA00819.

XX PR 15-NOV-1996; 96US-0751230.

XX PR 08-DEC-1995; 95US-0569721.

XX PA (UYTE-) UNIV TECHNOLOGIES INT INC.

XX PI Garkavstev I, Riabowol K;

XX DR WPI; 1997-332781/30.

XX DR N-PSDB; AAT69652.

XX PT Isolated tumour suppressor gene, INGI1 - useful to develop products

XX PT for inhibiting or increasing cell proliferation, in particular for

XX PT treatment or diagnosis of cancer

XX PS Claim 19; Fig 3; 63pp; English.

XX CC A full-length sequence (AAW19119) is provided of novel tumour

XX CC suppressor protein p33ING1. It was deduced from a cDNA clone

XX CC (AAT69652) obtd. from normal human fibroblast cells. Overexpression

XX CC of p33ING1 (formerly p33IG1) is thought to inhibit cell growth and

XX CC DNA synthesis, probably by arresting cells in the G1 phase of the

XX CC cell cycle. p33ING1 is expressed in normal mammary epithelial

XX CC cells, but expressed only at lower levels in several cancerous

XX CC mammary epithelial cell lines and is not expressed in many primary

XX CC brain tumours. p33ING1 can be administered to patients as a means

XX CC of decreasing proliferation of cancer cells, or can be used to

XX CC raise antibodies useful for the diagnosis of cancer, esp. breast

XX CC and brain cancer.

XX SQ Sequence 294 AA;

Query Match 85.0%; Score 34; DB 18; Length 294;

Best Local Similarity 71.4%; Pred. No. 63;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRILHC 7

Db 82 KRRMLHC 88

RESULT 14

AAW79675

ID AAW79675 standard; Protein: 294 AA.

XX AC AAW79675;

XX DT 18-JAN-1999 (first entry)

XX DE Human p33ING1 polypeptide.

XX KW INGI1 gene; p33ING1; human; apoptosis; cell death; breast cancer;

KW brain tumour; gene therapy; tumour suppressor.

XX Homo sapiens.

XX WO9844102-A2.

XX 08-OCT-1998.

XX 26-MAR-1998; 98WO-CA00277.

XX 27-MAR-1997; 97US-0828158.

XX (UYTE-) UNIV TECHNOLOGIES INT INC.

XX Garkavtsev I, Helbing CC, Johnston RN, Riabowol K;

XX WPI; 1998-542700/46.

XX N-PSDB; AAV62292.

XX Modulating eukaryotic apoptosis by increasing p33ING1 activity -
PT using p33ING1 derivatives, to induce apoptosis in cancer cells, and
PT in the investigation of apoptotic pathways

XX Example 2; Fig 3; 66pp; English.

CC This is the amino acid sequence of human p33ING1, a novel inhibitor
CC of cell growth and a candidate tumour suppressor. The sequence was
CC deduced from full-length ING1 cDNA (see AAV62285) obtained using a
CC positive selection procedure that combined subtractive hybridisation
CC with an in vivo selection assay to identify growth-suppressor
CC elements. ING1 is expressed in normal mammary epithelial cells, but
CC is expressed only at lower levels in several cancerous mammary
CC epithelial cell lines and is not expressed in many primary brain
CC tumours. A claimed method to potentiate apoptosis in a eukaryotic
CC cell involves administering an active p33ING1 peptide or an
CC oligonucleotide encoding such as a peptide. A claimed method for
CC inhibiting apoptosis in a eukaryotic cell involves administering an
CC antisense oligonucleotide. Also claimed are a method for
CC determining the apoptotic characteristics of a eukaryotic cell, an
CC assay for determining the level of p33ING1 activity in a eukaryotic
CC cell, and an isolated eukaryotic cell substantially free of p33ING1
CC biological activity. The invention discloses ING1 derivatives or
CC variants that may be used to induce apoptosis in eukaryotic cancer
CC cells.

XX SQ Sequence 294 AA;

Query Match 85.0%; Score 34; DB 19; Length 294;

Best Local Similarity 71.4%; Pred. No. 63;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

|.:|:|

Db 82 KRRMLHC 88

RESULT 15

AAV03244

ID AAV03244 standard; Protein; 294 AA.

XX AAV03244;

XX 26-AUG-1999 (first entry)

XX Amino acid sequence of the human p33-ING1 protein.

XX Human; p33-ING1 protein; growth regulation; apoptosis; DNA damage;

KW inhibition; anchorage independent growth; cytotoxic drug;

KW transcriptional activation; cancer; immortal cell line.

XX Homo sapiens.

XX WO9916790-A1.

PN

XX 08-APR-1999.

XX 24-SEP-1998; 98WO-US18179.

XX 14-JAN-1998; 98US-0006783.

XX 26-SEP-1997; 97US-0060138.

XX (UNII) UNIV ILLINOIS BOARD OF TRUSTEES.

XX (UYTE-) UNIV TECHNOLOGIES INT INC.

XX Garkavtsev I, Gudkov A, Riabowol K;

XX WPI; 1999-263685/22.

XX N-PSDB; AAX28688.

XX Use of p33-ING1 peptides

XX Disclosure; Fig 1; 64pp; English.

XX This is the amino acid sequence of the human p33-ING1 protein,
CC used in the method of the invention. The ING1 gene encodes p33-ING1
CC which can be used to modulate the activity of, isolate or detect p53.
CC Expression of the ING1 and p53 genes in a mammalian cell results in
CC normal growth regulation anchorage-dependent growth and apoptosis as
CC a response to irreversible DNA damage and other cellular insult.
CC Inhibition of expression of either gene results in a loss of cellular
CC growth control, anchorage independent growth, inhibition of apoptosis
CC and resistance to radiation and cytotoxic drugs. The p33-ING1 is a
CC component of the p53 signalling pathway that cooperates with p53 in
CC negative regulation of cell proliferation by modulating p53 dependent
CC transcriptional activation. Biological function of p53 signalling
CC pathway can therefore be regulated (both enhanced or suppressed) by
CC modulating p33-ING1 activity. The modulation of p33-ING1 activity can
CC be used for the stimulation or restoration of the p53 pathway in
CC anti cancer therapy or for the suppression of the p53 pathway to
CC defend sensitive tissues from genotoxic stress or for the generation
CC of immortal cell lines.

XX SQ Sequence 294 AA;

Query Match 85.0%; Score 34; DB 20; Length 294;

Best Local Similarity 71.4%; Pred. No. 63;

Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRILHC 7

|.:|:|

Db 82 KRRMLHC 88

Search completed: November 1, 2002, 14:47:09

Job time : 2.58682 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:08 ; Search time 1.45338 Seconds
(without alignments)
952.238 Million cell updates/sec

Title: US-09-606-129a-35

Perfect score: 49

Sequence: 1 QKYCCSRK 8

Scoring table: BLOSUM62
Gapop 10.0 , Capext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL_19:*
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phase:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriaph:*
17: sp_archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	49	100.0	296	Q9BRW8	Q9brw8 homo sapien
2	49	100.0	296	Q96QL4	Q96ql4 homo sapien
3	38	77.6	703	Q9KQ22	Q9kq22 vibrio chol
4	38	77.6	982	O9JGP6	O9jgp6 epizootic h
5	37	75.5	234	Q9UIS5	Q9uis5 homo sapien
6	37	75.5	243	Q9UIS4	Q9uis4 homo sapien
7	37	75.5	571	O18233	O18233 caenorhabdi
8	36	73.5	58	Q9V8F4	Q9v8f4 drosophila
9	36	73.5	71	Q9VS56	Q9vs56 guillardia
10	36	73.5	150	Q15371	Q15371 homo sapien
11	36	73.5	263	O44161	O44161 caenorhabdi
12	35	71.4	88	Q40142	Q40142 lycopersico
13	35	71.4	127	O17778	O17778 caenorhabdi
14	35	71.4	216	O9BKL4	O9bkl4 plasmodium
15	35	71.4	330	O9UGG9	O9ugg9 homo sapien
16	35	71.4	385	O45193	O45193 caenorhabdi

17	35	71.4	438	10	Q9XEP7	Q9xep7 sorghum bic
18	35	71.4	468	12	O55279	O55279 avian adeno
19	35	71.4	959	5	O9U3D7	O9u3d7 caenorhabdi
20	35	71.4	961	5	O9U3D6	O9u3d6 caenorhabdi
21	35	71.4	3190	5	O01368	O01368 drosophila
22	35	71.4	3275	5	O9W321	O9w321 drosophila
23	34	69.4	129	3	O13540	O13540 saccharomyc
24	34	69.4	158	11	O9D1Y9	O9d1y9 mus musculu
25	34	69.4	217	12	O81864	O81864 hepatitis e
26	34	69.4	236	16	O97IK7	O97ik7 clostridium
27	34	69.4	307	13	O9O2T5	O9o2t5 xenopus lae
28	34	69.4	485	10	O9LNI9	O9lni9 arabidopsis
29	34	69.4	491	12	O9YWL2	O9ywl2 hepatitis e
30	34	69.4	1484	5	O94298	O94298 caenorhabdi
31	34	69.4	1685	12	O9E8G6	O9e8g6 hepatitis e
32	34	69.4	1693	12	O89444	O89444 hepatitis e
33	34	69.4	1693	12	O81862	O81862 hepatitis e
34	34	69.4	1693	12	O81344	O81344 hepatitis e
35	34	69.4	1693	12	O69418	O69418 hepatitis e
36	34	69.4	1693	12	O69410	O69410 hepatitis e
37	34	69.4	1693	12	O39221	O39221 hepatitis e
38	34	69.4	1693	12	O9WLL5	O9wll5 hepatitis e
39	34	69.4	1693	12	O9WC28	O9wc28 hepatitis e
40	34	69.4	1693	12	O81876	O81876 hepatitis e
41	34	69.4	1698	12	O9YLR3	O9ylr3 hepatitis e
42	34	69.4	1703	12	O911I6	O911i6 hepatitis e
43	34	69.4	1707	12	O9IVZ9	O9ivz9 hepatitis e
44	34	69.4	1708	12	O9YLR1	O9ylr1 hepatitis e
45	34	69.4	1708	12	O9YK10	O9yk10 swine hepat

ALIGNMENTS

RESULT 1

Q9BRW8 ID Q9BRW8 PRELIMINARY; PRT; 296 AA.
AC Q9BRW8;
DT 01-JUN-2001 (Tremblrel. 17, Created)
DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)
DT 01-DEC-2001 (Tremblrel. 19, Last annotation update)
DE SIMILAR TO BILIVERDIN REDUCTASE A.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=BRAIN, PRIMITIVE NEUROECTODERMAL;
RA Strausberg R.;
RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; BC005902; AAH05902.1; -;
DR InterPro; IPR000683; GFO_IDH_MOCA.
DR Pfam; PF01408; GFO_IDH_MOCA; 1.
SQ SEQUENCE 296 AA; 33432 MW; A389AFDDB6ADBAF CRC64;

Query Match 100.0%; Score 49; DB 4; Length 296;
Best Local Similarity 100.0%; Pred. No. 0.071;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
|||||||
DB 289 QKYCCSRK 296

RESULT 2

Q96QL4 ID Q96QL4 PRELIMINARY; PRT; 296 AA.
AC Q96QL4;
DT 01-DEC-2001 (Tremblrel. 19, Created)
DT 01-DEC-2001 (Tremblrel. 19, Last sequence update)
DT 01-DEC-2001 (Tremblrel. 19, Last annotation update)
DE UNKNOWN (PROTEIN FOR MGC:14706).

```
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
[1]
RN SEQUENCE FROM N.A.
RP MEDLINE=20231376; PubMed=10770607;
RA Nara E., Iwata H., Inoue T.;
RT "The complete nucleotide sequence of segment L2 of Ibaraki virus
RL encoding for the antigen recognized by neutralizing antibodies.";
RL J. Vet. Med. Sci. 62:317-321(2000).
DR EMBL: AB030735; BAA93692.1; -.
DR InterPro: IPR001742; Orbi_VP2.
DR Pfam: PF00898; Orbi_VP2; 2.
DR ProDom: PD002938; Orbi_VP2; 1.
SQ SEQUENCE 296 AA; 33428 MW; 2CF2AA7F1CDB707 CRC64;

Query Match 100.0%; Score 49; DB 4; Length 296;
Best Local Similarity 100.0%; Pred. No. 0.071;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
Db 289 QKYCCSRK 296
|||||||

RESULT 3
Q9KQZ2 PRELIMINARY; PRT; 703 AA.
ID Q9KQZ2 AC Q9KQZ2
DT 01-OCT-2000 (TrEMBLrel. 15, Created)
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE ATP-DEPENDENT HELICASE, DING FAMILY.
GN VC1855.
OS Vibrio cholerae.
OC Bacteria; Proteobacteria; gamma subdivision; Vibrionaceae; Vibrio.
OX NCBI_TaxID=666;
[1]
RN SEQUENCE FROM N.A.
RP STRAIN=EL TOR N16961 / SEROTYPE O1;
RX MEDLINE=20406833; PubMed=10952301;
RA Heidelberg J.F., Eilen J.A., Nelson W.C., Clayton R.A., Gwinn M.L.,
RA Dodson R.J., Haft D.H., Hickey E.K., Peterson J.D., Umayam L.A.,
RA Gill S.R., Nelson K.E., Read T.D., Tettelin H., Richardson D.,
RA Ermolaeva M.D., Vamathevan J., Bass S., Qin H., Dragoi I., Sellers P.,
RA McDonald L., Utterback T., Fleischmann R.D., Nierman W.C., White O.,
RA Salzberg S.L., Smith H.O., Colwell R.R., Mekalanos J.J., Venter J.C.,
RA Fraser C.M.;
RT "DNA sequence of both chromosomes of the cholera pathogen Vibrio
RT cholerae.";
RL Nature 406:477-483(2000).
DR EMBL: AE004261; AAF95003.1; -.
DR TIGR: VC1855; -.
KW Helicase; Complete proteome.
SQ SEQUENCE 703 AA; 78488 MW; FC88B361B8A8578C CRC64;

Query Match 77.6%; Score 38; DB 16; Length 703;
Best Local Similarity 62.5%; Pred. No. 17;
Matches 5; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
Db 131 QKYCCSRK 138
|||||

RESULT 4
Q9JGP6 PRELIMINARY; PRT; 982 AA.
ID Q9JGP6 AC Q9JGP6
DT 01-OCT-2000 (TrEMBLrel. 15, Created)
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE OUTER CAPSID PROTEIN VP2.
GN L2.
OS Epizootic hemorrhagic disease virus.
OC Viruses; dsRNA viruses; Reoviridae; Orbivirus.
OX NCBI_TaxID=10908;
[1]

OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
[1]
RN SEQUENCE FROM N.A.
RP MEDLINE=20231376; PubMed=10770607;
RA Nara E., Iwata H., Inoue T.;
RT "The complete nucleotide sequence of segment L2 of Ibaraki virus
RL encoding for the antigen recognized by neutralizing antibodies.";
RL J. Vet. Med. Sci. 62:317-321(2000).
DR EMBL: AB030735; BAA93692.1; -.
DR InterPro: IPR001742; Orbi_VP2.
DR Pfam: PF00898; Orbi_VP2; 2.
DR ProDom: PD002938; Orbi_VP2; 1.
SQ SEQUENCE 982 AA; 115598 MW; 6E347B126158F775 CRC64;

Query Match 77.6%; Score 38; DB 12; Length 982;
Best Local Similarity 62.5%; Pred. No. 22;
Matches 5; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
Db 951 EKFCGRK 958
|||||

RESULT 5
Q9UIS5 PRELIMINARY; PRT; 234 AA.
ID Q9UIS5 AC Q9UIS5
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE SMALL NUCLEAR RIBONUCLEOPROTEIN B.
GN SNRPB.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
[1]
RN SEQUENCE FROM N.A.
RP Gray T.A., Martone D.L., Schalch M.A., McCarrey J.R., Nicholls R.D.;
RT "Concerted Regulation and Molecular Evolution of the Duplicated SNRPB
RT and SNRPB loci.";
RL Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF134825; AAD54488.1; -.
DR EMBL: AF134822; AAD54488.1; JOINED.
DR EMBL: AF134823; AAD54488.1; JOINED.
DR EMBL: AF134824; AAD54488.1; JOINED.
DR InterPro: IPR001163; snRNP_Sm.
DR Pfam: PF01423; Sm; 1.
KW Nucleocapsid; Ribonucleoprotein.
SQ SEQUENCE 234 AA; 26313 MW; A5898DB3C46A6E01 CRC64;

Query Match 75.5%; Score 37; DB 4; Length 234;
Best Local Similarity 71.4%; Pred. No. 11;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCSR 7
Db 150 KRYCCSR 156
|||||

RESULT 6
Q9UIS4 PRELIMINARY; PRT; 243 AA.
ID Q9UIS4 AC Q9UIS4
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE SMALL NUCLEAR RIBONUCLEOPROTEIN B'.
GN SNRPB.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
[1]
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RP SEQUENCE FROM N.A.
RA Gray T.A., Martone D.L., Schaldach M.A., McCarrey J.R., Nicholls R.D.;
RT "Concerted Regulation and Molecular Evolution of the Duplicated SNRPN
RL and SNRPN loci.";
RT Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF134825; AAD54489.1; -.
DR EMBL; AF134822; AAD54489.1; JOINED.
DR EMBL; AF134823; AAD54489.1; JOINED.
DR EMBL; AF134824; AAD54489.1; JOINED.
DR InterPro; IPR001163; snRNP_Sm.
DR Pfam; PF01423; Sm; 1.
KW Nucleocapsid; Ribonucleoprotein.
SQ SEQUENCE 243 AA; 27267 MW; 05D3C4F973640CD5 CRC64;

Query Match 75.5%; Score 37; DB 4; Length 243;
Best Local Similarity 71.4%; Pred. No. 11;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCSR 7
Db :|||||
150 KYCCSR 156

RESULT 7
O18233 PRELIMINARY; PRT; 571 AA.
ID O18233
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE Y57G11C.7 PROTEIN.
GN Y57G11C.7
OS Caenorhabditis elegans.
OC Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
OC Rhabditidae; Peloderinae; Caenorhabditis.
OX NCBI_TaxID=6239;
RN [1]
RP SEQUENCE FROM N.A.
RA McMurray A.A.;
RL Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.
[2]
RP SEQUENCE FROM N.A.
RA NCBI_TaxID=99069613; PubMed=9851916;
RX none;
RT "Genome sequence of the nematode C.elegans: A platform for
RT investigating biology.";
RL Science 282:2012-2018(1998).
DR EMBL; Z99281; CAB16509.1; -.
DR InterPro; IPR002900; DUF38.
DR InterPro; IPR001810; F-box.
DR Pfam; PF01827; DUF38; 2.
DR Pfam; PF00646; F-box; 1.
SQ SEQUENCE 571 AA; 66883 MW; DCB0A38465F67376 CRC64;

Query Match 75.5%; Score 37; DB 5; Length 571;
Best Local Similarity 62.5%; Pred. No. 22;
Matches 5; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSR 8
Db :|||||
192 KYCCPR 199

RESULT 8
Q9V8F4 PRELIMINARY; PRT; 58 AA.
ID Q9V8F4
AC Q9V8F4;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-MAY-2000 (TrEMBLrel. 13, Last annotation update)
DE CG14503 PROTEIN.
GN CG14503.
OS Drosophila melanogaster (Fruit fly).

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OC Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
OC Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
OC Ephydroidea; Drosophilidae; Drosophila.
OX NCBI_TaxID=7227;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BERKELEY;
RX MEDLINE=20196006; PubMed=10731132;
RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Anantides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., McKusick L.G.,
RA Arif J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.I., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brotter P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferreira S., Fleischmann W.,
RA Flosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Svirskaas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O.,
RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.;
RT "The genome sequence of Drosophila melanogaster.";
RL Science 287:2185-2195(2000).
DR EMBL; AE003800; AAF57713.1; -.
DR FlyBase; FBgn0040737; CG14503.
SQ SEQUENCE 58 AA; 6561 MW; 42ECFF3743C5930E CRC64;

Query Match 73.5%; Score 36; DB 5; Length 58;
Best Local Similarity 71.4%; Pred. No. 51;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 KYCCSR 8
Db :|||||
18 KYCCAEK 24

RESULT 9
Q98S56 PRELIMINARY; PRT; 71 AA.
ID Q98S56
AC Q98S56;
DT 01-OCT-2001 (TrEMBLrel. 18, Created)
DT 01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE PUTATIVE RNA POLYMERASE II SUBUNIT RPB10.
GN RPB10
OS Guillardia theta (Cryptomonas phl).
OC Nucleomorph.
OC Eukaryota; Cryptophyta; Cryptomonadaceae; Guillardia.
OX NCBI_TaxID=55529;
RN [1]

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RP SEQUENCE FROM N.A.
RX MEDLINE=21223349; PubMed=11323671;
RA Douglas S., Zauner S., Fraunholz M., Beaton M., Penny S., Deng L.T.,
RA Wu X., Reith M., Cavalier-Smith T., Maier U.G.;
RT "The highly reduced genome of an enslaved algal nucleus."
RL Nature 410:1091-1096(2001).
DR EMBL; AF083031; AAK39726.1; -.
DR InterPro; IPR000268; RNA_pol_N.1.
DR Pfam; PF01194; RNA_pol_N.1.
SQ SEQUENCE 71 AA; 8391 MW; 7221827907FF5504 CRC64;

Query Match 73.5%; Score 36; DB 8; Length 71;
Best Local Similarity 71.4%; Pred. No. 6.1;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCSR 7
|:|||||
Db 41 QRYCCRR 47

RESULT 10
Q15371 PRELIMINARY; PRT; 150 AA.
AC Q15371;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE RIBOSOMAL PROTEIN L18A HOMOLOGUE (FRAGMENT).
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA Zenz K.I.;
RL Submitted (AUG-1994) to the EMBL/GenBank/DBJ databases.
DR EMBL; X80821; CAA56787.1; -.
FT NON_TER 1
SQ SEQUENCE 150 AA; 18050 MW; 4E5E933C97FA075F CRC64;

Query Match 73.5%; Score 36; DB 4; Length 150;
Best Local Similarity 75.0%; Pred. No. 11;
Matches 6; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
|:|||||
Db 135 QKYCCLLK 142

RESULT 11
O44161 PRELIMINARY; PRT; 263 AA.
ID O44161
AC O44161;
DT 01-JUN-1998 (TrEMBLrel. 06, Created)
DT 01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE CD4.7 PROTEIN.
GN CD4.7
OS Caenorhabditis elegans.
OC Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditidae;
OC Rhabditidae; Pelodierinae; Caenorhabditis.
OX NCBI_TaxID=6239;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BRISTOL N2;
RX MEDLINE=94150718; PubMed=7906398;
RA Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
RA Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.,
RA Craxton A., Dear S., Du Z., Durbin R., Favello A., Fulton L.,
RA Gardner A., Green P., Hawkins T., Hillier L., Jier M., Johnston L.,
RA Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
RA Lighning J., Lloyd C., McMurray A., Mortimore B., O'Callaghan M.,
RA Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Showkeen R.,

RA Smaildon N., Smith A., Sonhammer E., Staden R., Sulston J.,
RA Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R.,
RA Watson A., Weinstock L., Wilkinson-Sproat J., Wohlman P.;
RT "2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
elegans.";
RL Nature 368:32-38(1994).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=BRISTOL N2;
RA Du Z., Scheet P.;
RT "The sequence of C. elegans cosmid CD4.";
RL Submitted (DEC-1997) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=BRISTOL N2;
RA Waterston R.;
RL Submitted (DEC-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF036694; AAB88345.1; -.
SQ SEQUENCE 263 AA; 29908 MW; 9551D43D09B7BACD CRC64;

Query Match 73.5%; Score 36; DB 5; Length 263;
Best Local Similarity 83.3%; Pred. No. 18;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KYCCSR 7
|:|||||
Db 234 KYCCTR 239

RESULT 12
Q40142 PRELIMINARY; PRT; 88 AA.
ID Q40142
AC Q40142;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE CELL WALL PROTEIN PRECURSOR.
OS Lycopersicon esculentum (Tomato).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
OC Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
OX NCBI_TaxID=4081;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CV. RUTGERS;
RX MEDLINE=95003699; PubMed=7919979;
RA Domingo C., Gomez M.D., Canes L., Hernandez-Yago J., Conejero V.,
RA Vera P.;
RT "A novel extracellular matrix protein from tomato plant associated
RT with lignified secondary cell wall.";
RL Plant Cell 6:1035-1047(1994).
DR EMBL; X77373; CAA54561.1; -.
KW Signal.
FT SIGNAL 1 25 POTENTIAL.
FT CHAIN 26 88 CELL WALL PROTEIN.
SQ SEQUENCE 88 AA; 9919 MW; 128810E3B886284A CRC64;

Query Match 71.4%; Score 35; DB 10; Length 88;
Best Local Similarity 83.3%; Pred. No. 11;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCS 6
|:|||||
Db 72 KKYCCS 77

RESULT 13
O17778 PRELIMINARY; PRT; 127 AA.
ID O17778
AC O17778;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)

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DE F10D11.3 PROTEIN.
GN F10D11.3.
OS Caenorhabditis elegans.
OC Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
OC Rhabditidae; Peloderiinae; Caenorhabditis.
OX NCBI_TaxID=6239;
RN [1]
RP SEQUENCE FROM N.A.
RA Dobson R.;
RL Submitted (OCT-1996) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=99069613; PubMed=9851916;
RA none;
RT "Genome sequence of the nematode C.elegans: A platform for
RT investigating biology."
RL Science 282:2012-2018(1998).
DR EMBL; Z81057; CAB02915.1; -.
SQ SEQUENCE 127 AA; 15008 MW; 6F015987A4E8446A CRC64;

Query Match 71.4%; Score 35; DB 5; Length 127;
Best Local Similarity 83.3%; Pred. No. 15;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 3 YCCSRK 8
Db 118 FCCSRK 123

RESULT 14
Q9BK14
ID Q9BK14 PRELIMINARY; PRT; 216 AA.
AC Q9BK14;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE THIOREDOXIN PEROXIDASE 2.
GN TPX2.
OS Plasmodium falciparum.
OC Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
OX NCBI_TaxID=5833;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21153246; PubMed=11231293;
RA Rahfs S.; Becker K.;
RT "Thioredoxin peroxidases of the malarial parasite Plasmodium
RT falciparum."
RL Eur. J. Biochem. 268:1404-1409(2001).
DR EMBL; AF225978; AAK20024.1; -.
KW Peroxidase.
SQ SEQUENCE 216 AA; 24680 MW; C73610CDD1015C1B CRC64;

Query Match 71.4%; Score 35; DB 5; Length 216;
Best Local Similarity 100.0%; Pred. No. 24;
Matches 5; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QKYCC 5
Db 51 QKYCC 55

RESULT 15
Q9UGG9
ID Q9UGG9 PRELIMINARY; PRT; 330 AA.
AC Q9UGG9;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE BA422A16.1 (E1A BINDING PROTEIN P300) (FRAGMENT).
GN EP300.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA Blakey S.;
RL Submitted (DEC-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AL096765; CAB62921.1; -.
DR InterPro; IPR001487; Bromodomain.
DR Pfam; PF00439; bromodomain; 1.
DR PRINTS; PR00503; BROMODOMAIN.
DR SMART; SM00297; BROMO; 1.
DR PROSITE; PS00633; BROMODOMAIN_1; 1.
DR PROSITE; PS50014; BROMODOMAIN_2; 1.
FT NON_TER 1
FT NON_TER 330
SQ SEQUENCE 330 AA; 37707 MW; 01F502BCBFA7C751 CRC64;

Query Match 71.4%; Score 35; DB 4; Length 330;
Best Local Similarity 83.3%; Pred. No. 33;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 3 YCCSRK 8
Db 223 YCCGRK 228

Search completed: November 1, 2002, 14:49:53
Job time : 4.45338 secs
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:41:32 ; Search time 0.411576 Seconds
(without alignments)
752.611 Million cell updates/sec

Title: US-09-606-129a-35

Perfect score: 49

Sequence: 1 QKYCCSRK 8

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	49	100.0	296	1 BIEA_HUMAN	P53004 homo sapien
2	39	79.6	963	1 ATC4_HUMAN	O75185 homo sapien
3	38	77.6	151	1 YOM1_PROPR	P29741 photobacter
4	36	73.5	71	1 RPBX_SCHPO	O13877 schizosacch
5	36	73.5	761	1 TOPI_MERJA	Q59046 methanococ
6	35	71.4	73	1 RPNL_METJA	Q57649 methanococ
7	35	71.4	202	1 T4S1_MOUSE	Q64302 mus musculu
8	35	71.4	652	1 ABG5_MOUSE	Q99pe8 mus musculu
9	35	71.4	652	1 ABG5_RAT	Q99pe7 rattus norv
10	35	71.4	709	1 SWI5_YEAST	P08153 saccharomyc
11	35	71.4	859	1 YDBB_SCHPO	Q10362 schizosacch
12	35	71.4	2414	1 P300_HUMAN	Q09472 homo sapien
13	35	71.4	2441	1 CBP_MOUSE	P45481 mus musculu
14	35	71.4	2442	1 CBP_HUMAN	Q92793 homo sapien
15	34	69.4	37	1 TXOF_HADVE	P81599 hadronyche
16	34	69.4	73	1 MPT5_AMBTR	P10414 ambrosia tr
17	34	69.4	76	1 SPY1_CHICK	Q9pt11 gallus gall
18	34	69.4	139	1 SPY1_HUMAN	Q43609 homo sapien
19	34	69.4	313	1 SPY1_MOUSE	Q9qvx9 mus musculu
20	34	69.4	418	1 EPF2_RALSO	Q45412 ralstonia s
21	34	69.4	503	1 YMJ6_CAEEL	P34482 caenorhabdi
22	34	69.4	1691	1 POLN_HEVNE	Q03495 hepatitis e
23	34	69.4	1693	1 POLN_HEVBU	P29324 hepatitis e
24	34	69.4	1693	1 POLN_HEVPU	Q04610 hepatitis e
25	34	69.4	1693	1 POLN_HEVPA	P33424 hepatitis e
26	34	69.4	4543	1 LRPI_CHICK	P98157 gallus gall
27	33	67.3	65	1 RPNL_PYRAB	Q9v194 pyrococcus
28	33	67.3	65	1 RPNL_PYRHO	O59298 pyrococcus
29	33	67.3	72	1 RPNL_THEAC	Q9ni09 thermoplas
30	33	67.3	76	1 RPNL_ARCFU	O29135 archaeoglob
31	33	67.3	98	1 RK23_ASTIO	P34771 astasia lon
32	33	67.3	183	1 YJRQ_YEAST	P46993 saccharomyc
33	33	67.3	210	1 YRBL_ECOLI	P46021 escherichia

34	33	67.3	238	1 TPML_LYCES	O01591 lycopersico
35	33	67.3	246	1 OS13_SOLCO	P50701 solanum com
36	33	67.3	246	1 OSMO_TOBAC	P14170 nicotiana t
37	33	67.3	247	1 NP24_LYCES	P12670 lycopersico
38	33	67.3	250	1 OS81_SOLCO	P50702 solanum com
39	33	67.3	250	1 OS35_SOLCO	P50703 solanum com
40	33	67.3	251	1 OLPA_TOBAC	P25871 nicotiana t
41	33	67.3	2045	1 CBP1_CAEEL	P34545 caenorhabdi
42	32	65.3	27	1 CXK7_CONPU	P56633 conus purpu
43	32	65.3	55	1 RPNL_MEYTH	Q36147 methanobact
44	32	65.3	66	1 RPNL_SULSO	Q98058 sulfolobus
45	32	65.3	67	1 RPBX_DROME	Q9vc49 drosophila

ALIGNMENTS

RESULT 1					
BIEA_HUMAN	BIEA_HUMAN	STANDARD;	PRT;	296 AA.	
AC	P53004;	1996 (Rel. 34, Created)			
DT	01-OCT-1996	(Rel. 34, Last sequence update)			
DT	16-OCT-2001	(Rel. 40, Last annotation update)			
DE	Biliverdin reductase A precursor (EC 1.3.1.24) (Biliverdin-IX alpha-reductase).				
DE					
GN	BLVRA OR BLVR OR BVR.				
OS	Homo sapiens (Human).				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.				
OX	NCBI_TaxID=9606;				
RN	[1]				
RP	SEQUENCE FROM N.A.				
RC	TISSUE=Placenta;				
RX	MEDLINE=96202961; PubMed=8631357;				
RA	Maines M.D., Polevoda B.V., Huang T.-J., McCoubrey W.K. Jr.;				
RA	"Human Biliverdin IXalpha reductase is a zinc-metalloprotein.				
RT	Characterization of purified and Escherichia coli expressed				
RT	enzymes.";				
RL	Eur. J. Biochem. 235:372-381(1996).				
RN	[2]				
RP	SEQUENCE FROM N.A.				
RA	Komuro A., Tobe T., Nakano Y., Yamaguchi T., Tomita M.;				
RL	Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.				
RN	[3]				
RP	SEQUENCE OF 1-117 FROM N.A.				
RA	Cordes M., Wollam C., Carter T.;				
RL	Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.				
RN	[4]				
RP	SEQUENCE OF 3-36; 48-74 AND 228-248.				
RC	TISSUE=Liver;				
RX	MEDLINE=93143333; PubMed=8424666;				
RA	Maines M.D., Trakshel G.M.;				
RT	"Purification and characterization of human biliverdin reductase.";				
RL	Arch. Biochem. Biophys. 300:320-326(1993).				
RN	[5]				
RP	SEQUENCE OF 3-22.				
RC	TISSUE=Liver;				
RX	MEDLINE=95014177; PubMed=7929092;				
RA	Yamaguchi T., Komoda Y., Nakajima H.;				
RT	"Biliverdin-IX alpha reductase and biliverdin-IX beta reductase from				
RT	human liver. Purification and characterization.";				
RL	J. Biol. Chem. 269:24343-24348(1994).				
CC	-!- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN.				
CC	-!- CATALYTIC ACTIVITY: Bilirubin + NAD(P)(+) -> biliverdin + NAD(P)H.				
CC	-!- COFACTOR: BINDS ONE ZINC ION. HAS DUAL PH/COFACTOR (NADH, NADPH).				
CC	-!- SPECIFICITY. USES NADH AT THE ACIDIC PH RANGE (6-6.7) AND NADPH AT				
CC	THE ALKALINE RANGE (8.5-8.7).				
CC	-!- PATHWAY: FINAL STEP IN HEME METABOLISM.				
CC	-!- SUBUNIT: MONOMER.				
CC	-!- SUBCELLULAR LOCATION: Cytoplasmic.				
CC	-!- TISSUE SPECIFICITY: LIVER.				
CC	-!- SIMILARITY: TO E.COLI YHHX.				

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CC -----
CC EMBL; X93086; CAA63635.1; -;
CC EMBL; U34877; AAC35588.1; -;
CC EMBL; AAC05189; AAC25526.1; -;
CC MIM; 109750; -;
CC InterPro: IPR000683; GFO_IDH_MOCA.
CC Pfam: PF01408; GFO_IDH_MOCA. 1.
CC Oxidoreductase; NAD; NADP; Zinc.
KW PROPEP 1
FT CHAIN 3 296 BILIVERDIN REDUCTASE A.
FT DOMAIN 11 16 POLY-VAL.
FT METAL 280 280 ZINC (POTENTIAL).
FT METAL 281 281 ZINC (POTENTIAL).
FT METAL 292 292 ZINC (POTENTIAL).
FT METAL 293 293 ZINC (POTENTIAL).
FT CONFLICT 3 3 A -> T (IN REF. 2).
FT CONFLICT 154 155 SD -> AG (IN REF. 2).
FT CONFLICT 160 160 D -> E (IN REF. 2).
SQ SEQUENCE 296 AA; 33488 MW; 0DFD3B386F4DFC0A CRC64;

Query Match 100.0%; Score 49; DB 1; Length 296;
Best Local Similarity 100.0%; Pred. No. 0.2;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
| | | | | | | |
Db 289 QKYCCSRK 296

RESULT 2
ATC4_HUMAN STANDARD; PRT; 963 AA.
AC 075185; 2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Probable calcium-transporting ATPase KIAA0703 (EC 3.6.3.8).
GN KIAA0703
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.

RX TISSUE=Brain;
RC MEDLINE=98403880; PubMed=9734811;
RA Ishikawa K.-I., Nagase T., Suyama M., Miyajima N., Tanaka A.,
RA Kotani H., Nomura N., Ohara O.;
RT "Prediction of the coding sequences of unidentified human genes. X.
RT The complete sequences of 100 new cDNA clones from brain which can
RT code for large proteins in vitro."
RL DNA Res. 5:169-176(1998).
CC -1- FUNCTION: THIS MAGNESIUM DEPENDENT ENZYME CATALYZES THE HYDROLYSIS
CC OF ATP COUPLED WITH THE TRANSPORT OF CALCIUM (BY SIMILARITY).
CC -1- CATALYTIC ACTIVITY: ATP + H(2)O + CA(2+)(IN) = ADP + PHOSPHATE +
CC CA(2+)(OUT).
CC -1- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
CC -1- SIMILARITY: BELONGS TO THE CATION TRANSPORT ATPASES FAMILY
CC (E1-E2 ATPASES). SUBFAMILY IIA.
CC -----
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CC -----
CC EMBL; AB014603; BAA31678.1; -;
CC HSSP; P04191; IEUL.
CC InterPro: IPR004014; Cation_ATPase.
CC InterPro: IPR001757; E1-E2_ATPase.
CC InterPro: IPR001454; Hydrolase.
CC InterPro: IPR000661; Na_H_K_ATPase.
CC Pfam; PF00689; Cation_ATPase_C; 1.
CC Pfam; PF00690; Cation_ATPase_N; 1.
CC Pfam; PF00122; E1-E2_ATPase; 1.
CC Pfam; PF00702; Hydrolase; 1.
CC PRINTS; PR00119; CATATPASE.
CC PROSITE; PS00154; ATPASE_E1_E2; 1.
KW Hydrolase; Calcium transport; Transmembrane; Phosphorylation;
KW App-binding; Metal-binding; Magnesium; Calcium-binding;
KW Multigene family.
FT DOMAIN 1 118 CYTOPLASMIC (BY SIMILARITY).
FT TRANSMEM 119 139 1 (BY SIMILARITY).
FT DOMAIN 140 151 LUMENAL (BY SIMILARITY).
FT TRANSMEM 152 170 2 (BY SIMILARITY).
FT DOMAIN 171 308 CYTOPLASMIC (BY SIMILARITY).
FT TRANSMEM 309 328 3 (BY SIMILARITY).
FT DOMAIN 329 340 LUMENAL (BY SIMILARITY).
FT TRANSMEM 341 358 4 (BY SIMILARITY).
FT DOMAIN 359 746 CYTOPLASMIC (BY SIMILARITY).
FT TRANSMEM 747 766 5 (BY SIMILARITY).
FT DOMAIN 767 776 LUMENAL (BY SIMILARITY).
FT TRANSMEM 777 797 6 (BY SIMILARITY).
FT DOMAIN 798 817 CYTOPLASMIC (BY SIMILARITY).
FT TRANSMEM 818 840 7 (BY SIMILARITY).
FT DOMAIN 841 856 LUMENAL (BY SIMILARITY).
FT TRANSMEM 857 876 8 (BY SIMILARITY).
FT DOMAIN 877 889 CYTOPLASMIC (BY SIMILARITY).
FT TRANSMEM 890 908 LUMENAL (BY SIMILARITY).
FT DOMAIN 909 923 9 (BY SIMILARITY).
FT TRANSMEM 924 944 10 (BY SIMILARITY).
FT DOMAIN 945 963 CYTOPLASMIC (BY SIMILARITY).
FT MOD_RES 963 963 PHOSPHORYLATION (BY SIMILARITY).
FT METAL 991 991 MAGNESIUM (BY SIMILARITY).
FT METAL 995 995 MAGNESIUM (BY SIMILARITY).
FT CA_BIND 349 349 SITE 2 (BY SIMILARITY).
FT CA_BIND 350 350 SITE 2 (BY SIMILARITY).
FT CA_BIND 352 352 SITE 2 (BY SIMILARITY).
FT CA_BIND 354 354 SITE 2 (BY SIMILARITY).
FT CA_BIND 785 785 SITE 2 (BY SIMILARITY).
FT CA_BIND 789 789 SITE 2 (BY SIMILARITY).
SQ SEQUENCE 963 AA; 105036 MW; C8CCE7BE29C43589 CRC64;

Query Match 79.6%; Score 39; DB 1; Length 963;
Best Local Similarity 75.0%; Pred. No. 19;
Matches 6; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
: | | | | | | |
Db 947 EKYCCSPK 954

RESULT 3
YOM1_PHOPR STANDARD; PRT; 151 AA.
ID YOM1_PHOPR
AC P29741;
DT 01-APR-1993 (Rel. 25, Created)
DT 01-APR-1993 (Rel. 25, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Putative ATP-dependent helicase in ompH 5' region (ORF1) (Fragment).
OS Photobacterium profundum (Photobacterium sp. (strain SS9)).
OC Bacteria; Proteobacteria; gamma subdivision; Vibrionaceae;
OC Photobacterium.
OX NCBI_TaxID=74109;
RN [1]
RP SEQUENCE FROM N.A.

RX MEDLINE=93380661; PubMed=8396546;
 RA Bartlett D.H., Chi E., Wright M.E.;
 RT "Sequence of the omph gene from the deep-sea bacterium Photobacterium
 RL S29.";
 RN Gene 131:125-128(1993).
 RP SIMILARITY TO DING.
 RX MEDLINE=93219138; PubMed=8385320;
 RA Koonin E.V.;
 RT "Escherichia coli ding gene encodes a putative DNA helicase related
 RL to a group of eukaryotic helicases including Rad3 protein.";
 CC Nucleic Acids Res. 21:1497-1497(1993).
 CC -1- SIMILARITY: BELONGS TO THE HELICASE FAMILY. DING SUBFAMILY.
 CC -----
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 CC -----
 DR EMBL; X67094; CAA47468.1; -;
 DR PIR; S23215;
 KW Hypothetical protein; Hydrolase; Helicase; ATP-binding;
 KW DNA-binding.
 FT NP_BIND 56 63 ATP (PROBABLE).
 FT NON_TER 151 151
 SQ SEQUENCE 151 AA; 17086 MW; FC8FA7862EAC1805 CRC64;
 Query Match 77.6%; Score 38; DB 1; Length 151;
 Best Local Similarity 62.5%; Pred. No. 6.6;
 Matches 5; Conservative 2; Mismatches 1; Indels 0; Gaps 0;
 Qy 1 QKYCCSRK 8
 Db 119 QRYCCNHR 126
 I:||||| I
 RESULT 4
 ID RPBX_SCHPO STANDARD; PRT; 71 AA.
 AC O13877; O14458;
 DT 15-JUL-1998 (Rel. 36, Created)
 DT 15-JUL-1998 (Rel. 36, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE DNA-directed RNA polymerases I, II, and III 8.3 kDa polypeptide
 DE (EC 2.7.7.6) (ABC10-beta).
 GN RPB10 OR SPAC1B3.12C.
 OS Schizosaccharomyces pombe (Fission yeast).
 OC Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
 OC Schizosaccharomycetales; Schizosaccharomycetaceae;
 OC Schizosaccharomycetes.
 OX NCBI_TaxID=4896;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=972;
 RA MEDLINE=97177445; PubMed=9054344;
 RA Shpakovskii G.V., Lebedenko E.N.;
 RT "Three regions of Rpb10 mini-subunit of nuclear RNA polymerases are
 RL strictly conserved in all eukaryotes (letter).";
 RL Bioorg. Khim. 22:938-940(1996).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC STRAIN=972;
 RA MEDLINE=98271918; PubMed=9608944;
 RA Shpakovskii G.V., Proshkin S.A., Lebedenko E.N.;
 RT "Exon-intron organization rpb10+ and rpb10+ genes of
 RL Schizosaccharomyces pombe, coding for mini-subunits of nuclear RNA-
 RL polymerase I-III.";
 RN Mol. Biol. (Mosk) 32:285-290(1998).
 RN [3]
 RP SEQUENCE FROM N.A.

RC STRAIN=972;
 RA Murphy L., Harris D., Barrell B.G., Rajandream M.A., Wood V.;
 RL Submitted (AUG-1997) to the EMBL/GenBank/DBJ databases
 CC -1- FUNCTION: DNA-DEPENDENT RNA POLYMERASE CATALYZES THE TRANSCRIPTION
 CC OF DNA INTO RNA USING THE FOUR RIBONUCLEOSIDE TRIPHOSPHATES AS
 CC SUBSTRATES.
 CC -1- CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
 CC [RNA](N).
 CC -1- SUBUNIT: EACH CLASS OF RNA POLYMERASE IS ASSEMBLED FROM 9 TO 15
 CC DIFFERENT POLYPEPTIDES. THIS SUBUNIT IS SHARED BY ALL 3 YEAST RNA
 CC POLYMERASES.
 CC -1- SUBCELLULAR LOCATION: Nuclear.
 CC -1- MISCELLANEOUS: THREE DISTINCT ZINC-CONTAINING RNA POLYMERASES ARE
 CC FOUND IN EUKARYOTIC NUCLEI: POLYMERASE I FOR THE RIBOSOMAL RNA
 CC PRECURSOR, POLYMERASE II FOR THE MRNA PRECURSOR, AND POLYMERASE
 CC III FOR 5S AND TRNA GENES.
 CC -1- SIMILARITY: BELONGS TO THE ARCHAEABACTERIA RPB10 / EUKARYOTIC RPB10
 CC RNA POLYMERASE SUBUNIT FAMILY.
 CC -----
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 CC -----
 DR EMBL; X95733; CAA65049.1; -;
 DR EMBL; AF027818; AAC16895.1; -;
 DR EMBL; D89596; BAA22805.1; -;
 DR EMBL; U80219; AAC49842.1; -;
 DR EMBL; Z98598; CAB11246.1; -;
 DR HSP; O26147; IEF4.
 DR InterPro; IPR002068; RNA_POL_N.
 DR Pfam; PF01194; RNA_POL_N; 1.
 DR PROSITE; PS01112; RNA_POL_N_8KD; 1.
 KW Transferrase; DNA-directed RNA polymerase; Transcription;
 KW Nuclear protein; Zinc; Metal-binding.
 FT METAL 7 7 ZINC (BY SIMILARITY).
 FT METAL 10 10 ZINC (BY SIMILARITY).
 FT METAL 44 44 ZINC (BY SIMILARITY).
 FT METAL 45 45 ZINC (BY SIMILARITY).
 SQ SEQUENCE 71 AA; 8276 MW; 8B9EE8FD59A2458 CRC64;
 Query Match 73.5%; Score 36; DB 1; Length 71;
 Best Local Similarity 71.4%; Pred. No. 7.7;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 Qy 1 QKYCCSR 7
 Db 41 QRYCCRR 47
 I:||||| I
 RESULT 5
 ID TOP1_METJA STANDARD; PRT; 761 AA.
 AC Q59046;
 DT 16-OCT-2001 (Rel. 40, Created)
 DT 16-OCT-2001 (Rel. 40, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE DNA topoisomerase I (EC 5.99.1.2) (Omega-protein) (Relaxing enzyme)
 DE (Untwisting enzyme) (Swivelase).
 GN TOPA OR MJ1652.
 OS Methanococcus jannaschii.
 OC Archaea; Euryarchaeota; Methanococcales; Methanococcaceae;
 OC Methanococcus.
 OX NCBI_TaxID=2190;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=JAL-1 / DSM 2661 / ATCC 43067;
 RX MEDLINE=96337999; PubMed=868087;
 RA Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D.,
 RA Sutton G.G., Blake J.A., Fitzgerald L.M., Clayton R.A., Gocayne J.D.,

RA Kerlavage A.R., Dougherty B.A., Tomb J.-F., Adams M.D., Reich C.I.,
 RA Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A.,
 RA Scott J.L., Geoghegan N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D.,
 RA Uterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C.,
 RA Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M.,
 RA Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.;
 RT "Complete genome sequence of the methanogenic archaeon, Methanococcus
 jannaschii.";
 RL Science 273:1058-1073(1996).
 CC -1- FUNCTION: THE REACTION CATALYZED BY TOPOISOMERASES LEADS TO THE
 CC CONVERSION OF ONE TOPOLOGICAL ISOMER OF DNA TO ANOTHER (BY
 CC SIMILARITY).
 CC -1- CATALYTIC ACTIVITY: ATP-independent breakage of single-stranded
 CC DNA, followed by passage and rejoining.
 CC -1- MISCELLANEOUS: WHEN A TOPOISOMERASE TRANSIENTLY BREAKS A DNA
 CC BACKBONE BOND, IT SIMULTANEOUSLY FORMS A PROTEIN-DNA LINK IN
 CC WHICH A TYROSYL OXYGEN IN THE ENZYME IS JOINED TO A DNA PHOSPHORUS
 CC AT ONE END OF THE ENZYME-SEVERED DNA STRAND.
 CC -1- SIMILARITY: BELONGS TO PROKARYOTIC TYPE I/III TOPOISOMERASE
 CC FAMILY.
 CC -----
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 CC -----
 DR EMBL; U67605; AAB99673.1; -;
 DR HSSP; P06612; IECL.
 DR TIGR; MJ1652; -;
 DR InterPro; IPR003601; DNATopI_ATP_bind.
 DR InterPro; IPR003602; DNATopI_DNA_bind.
 DR InterPro; IPR000380; Pro_topoisomerase.
 DR InterPro; IPR002936; Toprim.
 DR Pfam; PF01131; Topoisom_bac; 1.
 DR Pfam; PF01751; Toprim; 1.
 DR Pfam; PF01396; zf-C4_Topoiso; 3.
 DR PRINTS; PR00417; PTPISMRASEI.
 DR SMART; SM00437; TOP1ac; 1.
 DR SMART; SM00436; TOP1bc; 1.
 DR SMART; SM00493; TOPRIM; 1.
 DR PROSITE; PS00396; TOPOISOMERASE_I_PROK; 1.
 DR Isomerase; Topoisomerase; DNA-binding; Zinc-finger; Metal-binding;
 KW Repeat; Complete proteome.
 FT ZN_FING 600 626 C4-TYPE 1.
 FT ZN_FING 680 706 C4-TYPE 2.
 FT ZN_FING 721 747 C4-TYPE 3.
 FT ACT_SITE 315 315 DNA_CLEAVAGE (BY SIMILARITY).
 SQ SEQUENCE 761 AA; 87832 MW; 2F9C95753E202D82 CRC64;
 Query Match 73.5%; Score 36; DB 1; Length 761;
 Best Local Similarity 71.4%; Pred. No. 49;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 2 KYCCSRK 8
 Db 125 KYCCGRE 131
 RESULT 6
 RPON_METJA
 ID RPON_METJA STANDARD; PRT; 73 AA.
 AC Q57649;
 DT 01-NOV-1997 (Rel. 35, Created)
 DT 15-DEC-1998 (Rel. 37, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE DNA-directed RNA polymerase subunit N (EC 2.7.7.6).
 GN RPON OR MJ0196
 OS Methanococcus jannaschii.
 OC Archaea; Euryarchaeota; Methanococcales; Methanococcaceae;
 CC Methanococcus.

OX NCBI_TaxID=2190;
 [1]
 RN SEQUENCE FROM N.A.
 RP STRAIN=JAL-1 / DSM 2661 / ATCC 43067;
 RC MEDLINE=96337999; PubMed=8688087;
 RX Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D.,
 RA Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D.,
 RA Kerlavage A.R., Dougherty B.A., Tomb J.-F., Adams M.D., Reich C.I.,
 RA Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Nguyen D.,
 RA Scott J.L., Geoghegan N.S.M., Weidman J.F., Fuhrmann J.L., Hanna M.C.,
 RA Uterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Borodovsky M.,
 RA Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M.,
 RA Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.;
 RT "Complete genome sequence of the methanogenic archaeon, Methanococcus
 jannaschii.";
 RL Science 273:1058-1073(1996).
 CC -1- FUNCTION: DNA-DEPENDENT RNA POLYMERASE CATALYZES THE TRANSCRIPTION
 CC OF DNA INTO RNA USING THE FOUR RIBONUCLEOSIDE TRIPHOSPHATES AS
 CC SUBSTRATES.
 CC -1- CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
 CC (RNA)(N).
 CC -1- SIMILARITY: BELONGS TO THE ARCHAEABACTERIA RPON / EUKARYOTIC RPBI0
 CC RNA POLYMERASE SUBUNIT FAMILY.
 CC -----
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 CC -----
 DR EMBL; U67475; AAB98176.1; -;
 DR HSSP; O26147; 1EP4.
 DR TIGR; MJ0196; -;
 DR InterPro; IPR000268; RNA_pol_N.
 DR Pfam; PF01194; RNA_pol_N; 1.
 DR PROSITE; PS01112; RNA_POL_N_8KD; 1.
 KW Transferrase; DNA-directed RNA polymerase; Transcription; Zinc;
 KW Metal-binding; Complete proteome.
 FT METAL 7 7 ZINC (BY SIMILARITY).
 FT METAL 10 10 ZINC (BY SIMILARITY).
 FT METAL 44 44 ZINC (BY SIMILARITY).
 FT METAL 45 45 ZINC (BY SIMILARITY).
 SQ SEQUENCE 73 AA; 8695 MW; E716EA406D65B831 CRC64;
 Query Match 71.4%; Score 35; DB 1; Length 73;
 Best Local Similarity 71.4%; Pred. No. 11;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 QKYCCSR 7
 Db 41 KKYCCRR 47
 RESULT 7
 T4SL_MOUSE
 ID T4SL_MOUSE STANDARD; PRT; 202 AA.
 AC Q64302;
 DT 16-OCT-2001 (Rel. 40, Created)
 DT 16-OCT-2001 (Rel. 40, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Transmembrane 4 superfamily, member 1 (Tumor-associated antigen L6)
 DE (Membrane component, surface marker 1) (M3S1).
 GN TM4SF1 OR M3S1.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 [1]
 RP SEQUENCE FROM N.A., TISSUE SPECIFICITY, AND TOPOLOGY.
 RC STRAIN=BALB/C; TISSUE=Thymic epithelium;
 RX MEDLINE=94171760; PubMed=7510285;

RA Marken J.S., Bajorath J., Edwards C.P., Farr A.G., Schieven G.L.,
 RA Hellstroem I., Hellstroem K.E., Aruffo A.;
 RT "Membrane topology of the L6 antigen and identification of the protein
 RL J. Biol. Chem. 269.7397-7401(1994).
 CC -1- SUBCELLULAR LOCATION: Integral membrane protein.
 CC -1- TISSUE SPECIFICITY: HIGHLY EXPRESSED IN SKIN AND LUNG. MODERATELY
 CC EXPRESSED IN LYMPH NODES AND KIDNEYS. ALSO PRESENT IN THYMIC
 CC STROMA AND FIBROBLASTS.
 CC -1- SIMILARITY: BELONGS TO THE TETRASPANIN (TM4SF) FAMILY.
 CC -----
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 CC -----
 CC EMBL: LI5443; AAA39403.1; -;
 CC EMBL: LI5429; AAA17873.1; -;
 CC MGD: MGI:104678; Tm4sf1.
 CC Glycoprotein; Antigen; Transmembrane.
 CC DOMAIN 1 9 CYTOPLASMIC (PROBABLE).
 CC TRANSSEM 10 30 PROBABLE.
 CC DOMAIN 31 49 EXTRACELLULAR (PROBABLE).
 CC TRANSSEM 50 70 PROBABLE.
 CC DOMAIN 71 93 CYTOPLASMIC (PROBABLE).
 CC TRANSSEM 94 114 PROBABLE.
 CC DOMAIN 115 161 EXTRACELLULAR (PROBABLE).
 CC TRANSSEM 162 182 PROBABLE.
 CC DOMAIN 183 202 CYTOPLASMIC (PROBABLE).
 CC TRANSSEM 129 129 N-LINKED (GLCNAC. . .) (POTENTIAL).
 CC CARBOHYD 142 142 N-LINKED (GLCNAC. . .) (POTENTIAL).
 CC SEQUENCE 202 AA; 22243 MW; 93839E707D85FF02 CRC64;
 SQ
 Query Match 71.4%; Score 35; DB 1; Length 202;
 Best Local Similarity 83.3%; Pred. No. 25;
 Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 QY 3 YCCSRK 8
 Db 192 YCCSRQ 197
 RESULT 8
 ABG5_MOUSE
 ID ABG5_MOUSE STANDARD; PRT; 652 AA.
 AC Q99PE8;
 DT 01-MAR-2002 (Rel. 41, Created)
 DT 01-MAR-2002 (Rel. 41, Last sequence update)
 DT 01-MAR-2002 (Rel. 41, Last annotation update)
 DE ATP-binding cassette, sub-family G, member 5 (Sterolin-1).
 GN ABCG5.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=C57BL/6; TISSUE=Liver;
 RX MEDLINE=20578753; PubMed=11138003;
 RA Lee M.-H., Lu K., Hazard S., Yu H., Shulenin S., Hidaka H., Kojima H.,
 RA Allikmets R., Sakuma N., Pegoraro R., Srivastava A.K., Salen G.,
 RA Dean M., Patel S.B.;
 RT "Identification of a gene, ABCG5, important in the regulation of
 RT dietary cholesterol absorption.";
 RL Nat. Genet. 27:79-83(2001).
 RN [2]
 RP TISSUE SPECIFICITY, AND INDUCTION.
 RX MEDLINE=20553648; PubMed=11099417;
 RA Berge K.E., Tian H., Graf G.A., Yu L., Grishin N.V., Schultz J.,
 RA Kwiterovich P., Shan B., Barnes R., Hobbs H.H.;

RT "Accumulation of dietary cholesterol in sitosterolemia caused by
 RT mutations in adjacent ABC transporters.";
 RL Science 290.1771-1775(2000).
 CC -1- FUNCTION: Transporter that appears to play an indispensable role
 CC in the selective transport of the dietary cholesterol in and out
 CC of the enterocytes and in the selective sterol excretion by the
 CC liver into bile.
 CC -1- SUBUNIT: May form heterodimers with ABCG8 or be tightly coupled to
 CC ABCG8 along a pathway regulating dietary sterol absorption and
 CC excretion (by similarity).
 CC -1- SUBCELLULAR LOCATION: Integral membrane protein (Probable).
 CC -1- TISSUE SPECIFICITY: Expressed in the intestine and, at lower
 CC level, in the liver.
 CC -1- INDUCTION: Upregulated by cholesterol feeding. Possibly mediated
 CC by the liver X receptor/retinoid X receptor (LXR/RXR) pathway.
 CC -1- SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY. ABCG (WHITE)
 CC SUBFAMILY.
 CC -----
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 CC -----
 CC EMBL: AF312713; AAC53097.1; -;
 CC MGD: MGI:1351659; Abcg5.
 CC InterPro: IPR003593; AAA.
 CC InterPro: IPR003439; ABC-transportr.
 CC InterPro: IPR001687; ATP-GTP_A.
 CC Pfam: PF00005; ABC_tran; 1.
 CC SMART: SM00382; AAA; 1.
 CC PROSITE: PS00211; ABC_TRANSPORTER; 1.
 CC ATP-binding: Glycoprotein; Transmembrane; Transport.
 CC DOMAIN 1 385 CYTOPLASMIC (POTENTIAL).
 CC TRANSSEM 386 406 1 (POTENTIAL).
 CC DOMAIN 407 422 EXTRACELLULAR (POTENTIAL).
 CC TRANSSEM 423 443 2 (POTENTIAL).
 CC DOMAIN 444 463 CYTOPLASMIC (POTENTIAL).
 CC TRANSSEM 464 484 3 (POTENTIAL).
 CC DOMAIN 485 504 EXTRACELLULAR (POTENTIAL).
 CC TRANSSEM 505 525 4 (POTENTIAL).
 CC DOMAIN 526 529 CYTOPLASMIC (POTENTIAL).
 CC TRANSSEM 530 550 5 (POTENTIAL).
 CC DOMAIN 551 622 EXTRACELLULAR (POTENTIAL).
 CC TRANSSEM 623 643 6 (POTENTIAL).
 CC DOMAIN 644 652 CYTOPLASMIC (POTENTIAL).
 CC NP_BIND 87 94 ATP (POTENTIAL).
 CC CARBOHYD 410 410 N-LINKED (GLCNAC. . .) (POTENTIAL).
 CC CARBOHYD 585 585 N-LINKED (GLCNAC. . .) (POTENTIAL).
 CC CARBOHYD 592 592 N-LINKED (GLCNAC. . .) (POTENTIAL).
 CC SEQUENCE 652 AA; 73244 MW; 80CE37ADCC19771E CRC64;
 SQ
 Query Match 71.4%; Score 35; DB 1; Length 652;
 Best Local Similarity 100.0%; Pred. No. 62;
 Matches 5; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QKYCC 5
 Db 569 QKYCC 573
 RESULT 9
 ABG5_RAT
 ID ABG5_RAT STANDARD; PRT; 652 AA.
 AC Q99PE7;
 DT 01-MAR-2002 (Rel. 41, Created)
 DT 01-MAR-2002 (Rel. 41, Last sequence update)
 DT 01-MAR-2002 (Rel. 41, Last annotation update)
 DE ATP-binding cassette, sub-family G, member 5 (Sterolin-1).
 GN ABCG5.
 OS Rattus norvegicus (Rat).;

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OC NCBI_TaxID=101116;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=Sprague-Dawley; TISSUE=Small intestine;
 RX MEDLINE=20578753; PubMed=11138003;
 RA Lee M.-H., Lu K., Hazard S., Yu H., Shulenin S., Hidaka H., Kojima H.,
 RA Allikmets R., Sakuma N., Pegoraro R., Srivastava A.K., Salen G.,
 RA Dean M., Patel S.B.;
 RT "Identification of a gene, ABCG5, important in the regulation of
 RT dietary cholesterol absorption."
 RL Nat. Genet. 27:79-83(2001).
 CC -!- FUNCTION: Transporter that appears to play an indispensable role
 CC in the selective transport of the dietary cholesterol in and out
 CC of the enterocytes and in the selective sterol excretion by the
 CC liver into bile.
 CC -!- SUBUNIT: May form heterodimers with ABCG8 or be tightly coupled to
 CC ABCG8 along a pathway regulating dietary-sterol absorption and
 CC excretion (By similarity).
 CC -!- SUBCELLULAR LOCATION: Integral membrane protein (Probable).
 CC -!- SIMILARITY: BELONGS TO THE ABC TRANSPORTER FAMILY. ABCG (WHITE)
 CC SUBFAMILY.
 CC -----
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 CC -----
 DR EMBL; AF312714; AAG53098.2; -;
 DR InterPro: IPR003593; AAA;
 DR InterPro: IPR003439; ABC_transportr.
 DR Pfam: PF00005; ABC_tran; 1.
 DR SMART: SM00382; AAA; 1.
 DR PROSITE: PS00211; ABC_TRANSPORTER; 1.
 KW ATP-binding; Glycoprotein; Transmembrane; Transport.
 FT DOMAIN 1 385
 FT TRANSMEM 386 406
 FT DOMAIN 407 422
 FT TRANSMEM 423 443
 FT DOMAIN 444 463
 FT TRANSMEM 464 484
 FT DOMAIN 485 504
 FT TRANSMEM 505 525
 FT DOMAIN 526 529
 FT TRANSMEM 530 550
 FT DOMAIN 551 624
 FT TRANSMEM 625 645
 FT DOMAIN 646 652
 FT NP_BIND 87 94
 FT CARBOHYD 585 585
 FT CARBOHYD 592 592
 SQ SEQUENCE 652 AA; 73342 MW; 4D42FE2BAB0DAD59 CRC64;
 Query Match 71.4%; Score 35; DB 1; Length 652;
 Best Local Similarity 100.0%; Pred. No. 62;
 Matches 5; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 QKYCC 5
 Db 569 QKYCC 573
 RESULT 10
 ID SWI5_YEAST
 AC P08153;
 DT 01-AUG-1988 (Rel. 08, Created)
 DT 01-AUG-1988 (Rel. 08, Last sequence update)

DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Transcriptional factor SWI5.
 GN SWI5 OR YDR146C OR YD8358.03c.
 OS Saccharomyces cerevisiae (Baker's yeast).
 OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
 OC Saccharomycetales; Saccharomycetaceae; Saccharomyces.
 ON NCBI_TaxID=4932;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=88211561; PubMed=3284746;
 RA Stillman D.J., Bankier A.T., Seddon A., Groenhout E.G., Nasmyth K.A.;
 RT "Characterization of a transcription factor involved in mother cell
 RT specific transcription of the yeast HO gene."
 RL EMBO J. 7:485-494(1988).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC STRAIN=S288C / AB972;
 RA Murphy L., Richards C., Harris D., Barrell B.G., Rajandream M.A.,
 RA Walsh S.V.;
 RL Submitted (JUL-1995) to the EMBL/GenBank/DBJ databases.
 RN [3]
 RP DNA-BINDING.
 RX MEDLINE=88156968; PubMed=2831463;
 RA Nagai K., Nakaseko Y., Nasmyth K.A., Rhodes D.;
 RT "Zinc-finger motifs expressed in E. coli and folded in vitro direct
 RT specific binding to DNA."
 RL Nature 332:284-286(1988).
 RN [4]
 RP PHOSPHORYLATION, MUTAGENESIS, AND INTRACELLULAR LOCALIZATION.
 RX MEDLINE=91347374; PubMed=1652372;
 RA Moll T., Tebb G., Surana U., Robitsch H., Nasmyth K.;
 RT "The role of phosphorylation and the CDC28 protein kinase in cell
 RT cycle-regulated nuclear import of the S. cerevisiae transcription
 RT factor SWI5."
 RL Cell 66:743-758(1991).
 RN [5]
 RP STRUCTURE BY NMR OF 540-608.
 RX MEDLINE=93085741; PubMed=1453468;
 RA Neuhaus D., Nakaseko Y., Schwabe J.W.R., Klug A.;
 RT "Solution structures of two zinc-finger domains from SWI5 obtained
 RT using two-dimensional 1H nuclear magnetic resonance spectroscopy. A
 RT zinc-finger structure with a third strand of beta-sheet."
 RL J. Mol. Biol. 228:637-651(1992).
 CC -!- FUNCTION: DETERMINES THE MOTHER-CELL-SPECIFIC TRANSCRIPTION OF THE
 CC HO ENDONUCLEASE GENE THAT IS RESPONSIBLE FOR THE INITIATION OF
 CC MATING-TYPE SWITCHING IN YEAST. RECOGNIZES A SPECIFIC SEQUENCE IN
 CC THE PROMOTER OF THE HO GENE. ACTIVATES EGT2 TRANSCRIPTION IN A
 CC CONCENTRATION-DEPENDENT MANNER. SYNTHESIZED DURING G2 AND EARLY
 CC MITOSIS.
 CC -!- SUBCELLULAR LOCATION: NUCLEAR IN G1, BUT CYTOPLASMIC IN S, G2, AND
 CC M CELL CYCLE PHASES.
 CC -!- PTM: CELL CYCLE-DEPENDENT PHOSPHORYLATION OF THREE SERINE RESIDUES
 CC PREVENTS SWI5 FROM ENTERING THE NUCLEUS, AND IT ACCUMULATES IN THE
 CC CYTOPLASM. AS A CONSEQUENCE OF CDC28 KINASE INACTIVATION AT THE
 CC END OF ANAPHASE, THE THREE SERINE RESIDUES ARE DEPHOSPHORYLATED
 CC AND SWI5 ENTERS THE NUCLEUS TO ACTIVATE TRANSCRIPTION. IT IS THEN
 CC RAPIDLY DEGRADED. THREONINE PHOSPHORYLATION ALSO SEEMS TO OCCUR.
 CC -!- SIMILARITY: STRONG, TO YEAST METALLOTHIONEIN EXPRESSION ACTIVATOR
 CC ACE2.
 CC -----
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 CC -----
 DR EMBL; X06978; CAA30040.1; -;
 DR EMBL; 250046; CAA90369.1; -;
 DR PIR; S00342; TWBY55.
 DR PDB; INCS; 10-JUL-96.
 DR PDB; 1ZFD; 14-OCT-96.

DR TRANSFAC; T00776; -
DR SGD; S0002553; SWIS.
DR InterPro; IPR000637; AT_hoek.
DR InterPro; IPR000822; Znf-C2H2.
DR Pfam; PF02178; AT_hoek; 1.
DR Pfam; PF00096; zf-C2H2; 3.
DR PRINTS; PR00048; ZINC_FINGER.
DR SMART; SM00384; AT_hoek; 1.
DR SMART; SM00355; Znf_C2H2; 2.
DR PROSITE; PS00028; ZINC_FINGER_C2H2_1; 2.
DR PROSITE; PS00157; ZINC_FINGER_C2H2_2; 2.
KW Transcription regulation; Activator; Zinc-finger; DNA-binding;
KW Repeat; Metal-binding; Nuclear protein; Phosphorylation;
KW 3D-structure.
FT DOMAIN 550 632 ZINC FINGERS.
FT ZN_FING 550 574 C2H2-TYPE.
FT ZN_FING 580 604 C2H2-TYPE.
FT ZN_FING 609 632 C2H2-TYPE.
FT SITE 635 659 NUCLEAR TARGETING SIGNAL (POTENTIAL).
FT MOD_RES 522 522 PHOSPHORYLATION (BY CDC28).
FT MOD_RES 646 646 PHOSPHORYLATION (BY CDC28).
FT MOD_RES 664 664 PHOSPHORYLATION (BY CDC28).
FT MUTAGEN 522 522 S->A: CONSTITUTIVE NUCLEAR ENTRY; WHEN
FT MUTAGEN 646 646 ASSOCIATED WITH A-646 AND A-664.
FT MUTAGEN 664 664 S->A: CONSTITUTIVE NUCLEAR ENTRY; WHEN
FT MUTAGEN 664 664 ASSOCIATED WITH A-522 AND A-664.
FT SEQUENCE 709 AA; 79775 MW; BEF5ED5BF6E30F6 CRC64;
Query Match 71.4%; Score 35; DB 1; Length 709;
Best Local Similarity 75.0%; Pred. No. 66;
Matches 6; Conservative. 0; Mismatches 2; Indels 0; Gaps 0;
Qy . 1 QKYCCSRK 8
Db 269 QKYCLQK 276
RESULT 11
ID YDBB_SCHPO STANDARD; PRT; 859 AA.
AC Q10362;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Hypothetical 94.9 kDa protein C22E12.11c in chromosome I.
GN SPAC22E12.11c.
OS Schizosaccharomyces pombe (Fission yeast).
OC Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
OC Schizosaccharomycetales; Schizosaccharomycetaceae;
OC Schizosaccharomycetes.
OX NCBI_TaxID=4896;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=972;
RA Devlin K., Church C.M., Barrell B.G., Rajandream M.A., Walsh S.V.;
RL Submitted (MAR-1996) to the EMBL/GenBank/DBJ databases.
CC -!- SIMILARITY: CONTAINS 1 PHD-TYPE ZINC FINGER.
CC -!- SIMILARITY: CONTAINS 1 SET DOMAIN.
CC -!- SIMILARITY: TO YEAST YKR029C AND YJL105W.
CC -----
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CC -----
CC EMBL; Z70043; CAA93898.1; -
DR InterPro; IPR001965; PHD.
DR InterPro; IPR001214; SET.

DR Pfam; PF00628; PHD; 1.
DR Pfam; PF00856; SET; 1.
DR SMART; SM00249; PHD; 1.
DR SMART; SM00317; SET; 1.
DR PROSITE; PS0280; SET; 1.
KW Hypothetical protein; Zinc-finger.
FT DOMAIN 226 341 SET.
SQ SEQUENCE 859 AA; 94886 MW; B4865BF40FD2C5D8 CRC64;
Query Match 71.4%; Score 35; DB 1; Length 859;
Best Local Similarity 83.3%; Pred. No. 77;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
Qy 2 KYCCSR 7
Db 221 KFCCSR 226
RESULT 12
ID P300_HUMAN STANDARD; PRT; 2414 AA.
AC Q09472;
DT 15-JUL-1998 (Rel. 36, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE E1A-associated protein p300.
GN EP300 OR P300.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA MEDLINE=95011587; PubMed=7523245;
RA Eckner R., Ewen M.E., Newsome D., Gerdes M., Decaprio J.A.,
RA Lawrence J.B., Livingston D.M.;
RT "Molecular cloning and functional analysis of the adenovirus E1A-
RT associated 300-kD protein (p300) reveals a protein with properties of
RT a transcriptional adaptor.";
RL Genes Dev. 8:869-884(1994).
CC -!- FUNCTION: PROBABLE TRANSCRIPTIONAL ADAPTOR REQUIRED FOR THE
CC ACTIVITY OF CERTAIN COMPLEX TRANSCRIPTIONAL REGULATORY ELEMENTS.
CC MAY HAVE A FUNCTION IN CELL CYCLE REGULATION. BINDS TO AND MAY BE
CC INVOLVED IN THE TRANSFORMING CAPACITY OF THE ADENOVIRUS E1A
CC PROTEIN.
CC -!- SUBCELLULAR LOCATION: Nuclear.
CC -!- SIMILARITY: CONTAINS 1 BROMODOMAIN.
CC -!- SIMILARITY: CONTAINS 1 ZZ-TYPE ZINC FINGER.
CC -----
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CC -----
CC EMBL; U01877; AAA18639.1; -
DR TRANSFAC; T01427; -
DR MIN; 602700; -
DR InterPro; IPR001487; Bromodomain.
DR InterPro; IPR003101; KIX.
DR InterPro; IPR000197; TAZ_finger.
DR InterPro; IPR000433; Znf_ZZ.
DR Pfam; PF00439; bromodomain; 1.
DR Pfam; PF02172; KIX; 1.
DR Pfam; PF02135; zf-TAZ; 2.
DR Pfam; PF00569; ZZ; 1.
DR PRINTS; PR00503; BROMODOMAIN.
DR SMART; SM00297; BROMO; 1.
DR SMART; SM00291; Znf_ZZ; 1.
DR PROSITE; PS00633; BROMODOMAIN_1; 1.
DR PROSITE; PS50014; BROMODOMAIN_2; 1.

```
DR PROSITE; PS01357; ZF_ZZ_1; 1.
DR PROSITE; PS0135; ZF_ZZ_2; 1.
KW Transcription regulation; Nuclear protein; Bromodomain; Cell cycle;
KW Zinc-finger.
FT DOMAIN 11 17 NUCLEAR LOCALIZATION SIGNAL (POTENTIAL).
FT DOMAIN 1067 1139 BROMODOMAIN.
FT DOMAIN 1572 1818 BINDING REGION FOR E1A ADENOVIRUS.
FT ZN_FING 1664 1707 ZZ-TYPE.
FT DOMAIN 797 800 POLY-SER.
FT DOMAIN 1519 1526 POLY-GLU.
FT DOMAIN 2066 2069 POLY-GLN.
FT DOMAIN 2190 2195 POLY-GLN.
SQ SEQUENCE 2414 AA; 264113 MW; 6BF909EE4B9D693 CRC64;

Query Match 71.4%; Score 35; DB 1; Length 2414;
Best Local Similarity 83.3%; Pred. No. 1.7e+02;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 3 YCCSRK 8
DB 1162 YCCGRK 1167

RESULT 13
CBP_MOUSE
ID CBP_MOUSE STANDARD; PRT; 2441 AA.
AC P45481;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE CREB-binding protein.
GN CREBBP OR CBP.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Euthera; Rodentia; Sciurognathi; Muridae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=Brain;
MEDLINE=94019866; PubMed=8413673;
RA Chivlia J.C., Kwok R.P.S., Lamb N., Hagiwara M., Montminy M.R.,
RA Goodman R.H.;
RT "Phosphorylated CREB binds specifically to the nuclear protein CBP.";
RL Nature 365:855-859(1993).
CC -!- FUNCTION: MEDIATES CAMP-GENE REGULATION BY BINDING SPECIFICALLY TO
CC PHOSPHORYLATED CREB PROTEIN. ACTING AS A COACTIVATOR, CBP AUGMENTS
CC THE ACTIVITY OF PHOSPHORYLATED CREB TO ACTIVATE TRANSCRIPTION OF
CC CAMP-RESPONSIVE GENES.
CC -!- SUBCELLULAR LOCATION: Nuclear.
CC -!- SIMILARITY: CONTAINS 1 BROMODOMAIN.
CC -!- SIMILARITY: CONTAINS 1 ZZ-TYPE ZINC FINGER.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; S66385; AAB28651.1; -.
DR TRANSFAC; T01318; -.
DR MGD; MGI:1098280; Crebbp.
DR InterPro; IPR001487; Bromodomain.
DR InterPro; IPR003101; KIX.
DR InterPro; IPR000197; TAZ_finger.
DR InterPro; IPR000433; Znf_ZZ.
DR Pfam; PF00439; bromodomain; 1.
DR Pfam; PF02172; KIX; 1.
DR Pfam; PF02135; zf-TAZ; 2.
DR Pfam; PF00569; ZZ; 1.
DR PRINTS; PR00503; BROMODOMAIN.
DR SMART; SM00297; BROMO; 1.
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DR SMART; SM00291; Znf_ZZ; 1.
DR PROSITE; PS00633; BROMODOMAIN_1; 1.
DR PROSITE; PS00014; BROMODOMAIN_2; 1.
DR PROSITE; PS01357; ZF_ZZ_1; 1.
DR PROSITE; PS0135; ZF_ZZ_2; 1.
KW Transcription regulation; Nuclear protein; Activator; Bromodomain;
KW Zinc-finger.
FT DOMAIN 1104 1176 BROMODOMAIN.
FT ZN_FING 1702 1745 ZZ-TYPE.
FT DOMAIN 1062 1065 POLY-GLU.
FT DOMAIN 1556 1563 POLY-GLU.
FT DOMAIN 1944 1949 POLY-PRO.
FT DOMAIN 1968 1971 POLY-GLN.
FT DOMAIN 2082 2086 POLY-GLN.
FT DOMAIN 2200 2216 POLY-GLN.
FT DOMAIN 2296 2299 POLY-GLN.
SQ SEQUENCE 2441 AA; 265474 MW; 0ABB028C3112F419 CRC64;

Query Match 71.4%; Score 35; DB 1; Length 2441;
Best Local Similarity 83.3%; Pred. No. 1.7e+02;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 3 YCCSRK 8
DB 1199 YCCGRK 1204

RESULT 14
CBP_HUMAN
ID CBP_HUMAN STANDARD; PRT; 2442 AA.
AC Q92793; Q16376; O00147;
DT 15-JUL-1998 (Rel. 36, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE CREB-binding protein.
GN CREBBP OR CBP.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Euthera; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=97385172; PubMed=9238046;
RA Sobulo O.M., Borrow J., Tomek R., Reshmi S., Harden A.,
RA Schlegelberger B., Housman D., Doggett N.A., Rowley J.D.,
RA Zeleznik-Le N.J.;
RT "MLL is fused to CBP, a histone acetyltransferase, in therapy-related
RT acute myeloid leukemia with a t(11;16)(q23;p13.3).";
RL Proc. Natl. Acad. Sci. U.S.A. 94:8732-8737(1997).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=97321049; PubMed=9177780;
RA Giles R.H., Petrif F., Dauwerse H.G., den Hollander A.I.,
RA Lushnikova T., van Ommen G.J.B., Goodman R.H., Deaven L.L.,
RA Doggett N.A., Peters D.J.M., Breuning M.H.;
RT "Construction of a 1.2-Mb contig surrounding, and molecular analysis
RT of, the human CREB-binding protein (CBP/CREBBP) gene on chromosome
RT 16p13.3.";
RL Genomics 42:96-144(1997).
RN [3]
RP SEQUENCE OF 1-405 FROM N.A.
RX MEDLINE=96376968; PubMed=8782817;
RA Borrow J., Stanton V.P., Andresen J.M., Becher R., Behm F.G.,
RA Chaganti R.S.K., Civin C.I., Distche C., Dube I., Frischauf A.M.,
RA Housman D., Mitelman F., Volinia S., Watmore A.E., Housman D.E.;
RT "The translocation t(8;16)(p11;p13) of acute myeloid leukaemia fuses
RT a putative acetyltransferase to the CREB-binding protein.";
RL Nat. Genet. 14:33-41(1996).
CC -!- FUNCTION: MEDIATES CAMP-GENE REGULATION BY BINDING SPECIFICALLY TO
CC PHOSPHORYLATED CREB PROTEIN. ACTING AS A COACTIVATOR, CBP AUGMENTS
CC THE ACTIVITY OF PHOSPHORYLATED CREB TO ACTIVATE TRANSCRIPTION OF
CC CAMP-RESPONSIVE GENES.
CC -!- SUBUNIT: INTERACTS WITH SMAD1, SMAD2 AND SMAD3.
```

CC -1- SUBCELLULAR LOCATION: Nuclear.
CC -1- DISEASE: INVOLVED IN ACUTE LEUKEMIAS BY CHROMOSOMAL TRANSLOCATIONS
CC T(8;16)(p11;p13) INVOLVING CBP AND MOZ, AND T(11;16)(Q23;P13.3)
CC INVOLVING CBP AND MLL.
CC -1- DISEASE: DEFECTS IN CREBBP ARE THE CAUSE OF RUBINSTEIN-TAYBI
CC SYNDROME (RBS), A DISORDER CHARACTERIZED BY CRANIOFACIAL
CC ABNORMALITIES, BROAD THUMBS, BROAD BIG TOES, MENTAL RETARDATION
CC AND A PROPENSITY FOR DEVELOPMENT OF MALGNANCIES.
CC -1- SIMILARITY: CONTAINS 1 BROMODOMAIN
CC -1- SIMILARITY: CONTAINS 1 Z2-TYPE ZINC FINGER.
CC -----
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CC -----
DR EMBL; U47741; AAC51770.1; -;
DR EMBL; U85962; AAC51331.1; -;
DR EMBL; U89354; AAC51339.1; -;
DR EMBL; U89355; AAC51340.1; -;
DR MIM; 600140; -;
DR InterPro; IPR001487; Bromodomain.
DR InterPro; IPR003101; KIX.
DR InterPro; IPR000197; TAZ_finger.
DR InterPro; IPR000433; ZnF_ZZ.
DR Pfam; PF00439; bromodomain; 1.
DR Pfam; PF02172; KIX; 1.
DR Pfam; PF02135; zf-TAZ; 2.
DR Pfam; PF00569; ZZ; 1.
DR PRINTS; PR00503; BROMODOMAIN.
DR SMART; SM00297; BROMO; 1.
DR SMART; SM00291; ZnF_ZZ; 1.
DR PROSITE; PS00633; BROMODOMAIN_1; 1.
DR PROSITE; PS00014; BROMODOMAIN_2; 1.
DR PROSITE; PS01357; ZF_ZZ_1; 1.
DR PROSITE; PS0135; ZF_ZZ_2; 1.
KW Transcription regulation; Nuclear protein; Activator; Bromodomain;
KW Chromosomal translocation; Zinc-finger.
FT ZN_FING 1701 1744
FT DOMAIN 363 430
FT DOMAIN 452 683
FT DOMAIN 1103 1175
FT DOMAIN 1061 1064
FT DOMAIN 1199 1487
FT DOMAIN 1555 1562
FT DOMAIN 1675 1849
FT DOMAIN 1943 1948
FT DOMAIN 1967 1970
FT DOMAIN 2081 2085
FT DOMAIN 2199 2216
FT DOMAIN 2245 2248
FT DOMAIN 2297 2300
FT DOMAIN 1511 1513
FT CONFLICT 1724 1725
FT CONFLICT 1770 1770
FT CONFLICT 1779 1789
FT CONFLICT 1812 1812
SQ SEQUENCE 2442 AA; 265336 MW; 42D084619475F3D2 CRC64;

Query Match 71.4%; Score 35; DB 1; Length 2442;
Best Local Similarity 83.3%; Pred. No. 1.7e+02;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 3 YCCSRK 8
Db 1198 YCCGRK 1203

RESULT 15
TXOF_HADVE

ID TXOF_HADVE STANDARD; PRT; 37 AA.
AC P81599;
DT 15-JUL-1999 (Rel. 38, Created)
DT 15-JUL-1999 (Rel. 38, Last sequence update)
DE 01-MAR-2002 (Rel. 41, Last annotation update)
OS Omega-atracotoxin-Hv1f (Omega-Actx-Hv1f).
OS Hadronyche versuta (Blue mountains funnel-web spider) (Atrax
versutus).
OC Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
OC Mygalomorphae; Hexathelidae; Hadronyche.
OX NCBI_TaxID=6904;
RN [1]
RP SEQUENCE.
RC TISSUE=Venom;
RX MEDLINE=99421654; PubMed=10491095;
RA Wang X.-H., Smith R., Fletcher J.I., Wilson H., Wood C.J.,
RA Meriin E.H., King G.F.;
RT "Structure-function studies of w-atracotoxin, a potent antagonist
of insect voltage-gated calcium channels.";
RL Eur. J. Biochem. 264:488-494(1999).
CC -1- FUNCTION: INHIBITS INSECT, BUT NOT MAMMALIAN, VOLTAGE-GATED
CALCIUM CHANNEL CURRENTS.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC HSSP; P56207; IAXH.
DR HSSP; P56207; IAXH.
KW Calcium channel inhibitor; Toxin; Neurotoxin.
FT DISULFID 4 18 BY SIMILARITY.
FT DISULFID 11 22 BY SIMILARITY.
FT DISULFID 17 36 BY SIMILARITY.
SQ SEQUENCE 37 AA; 3951 MW; EEC16AE67EE3F36A CRC64;
Query Match 69.4%; Score 34; DB 1; Length 37;
Best Local Similarity 100.0%; Pred. No. 9.7;
Matches 5; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 KYCCS 6
Db 15 KYCCS 19

Search completed: November 1, 2002, 14:47:51
Job time : 2.41158 secs

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:58 ; Search time 0.848875 seconds
(without alignments)
905.569 Million cell updates/sec

Title: US-09-606-129a-35
Perfect score: 49
Sequence: 1 QKYCCSRK 8
Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues.

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_71.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. NO. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	49	100.0	296	2 G02066	biliverdin reducta
2	49	100.0	296	2 S62624	biliverdin reducta
3	38	77.6	151	2 S23215	hypothetical prote
4	38	77.6	703	2 B82148	ATP-dependent heli
5	37	75.5	571	2 T27220	hypothetical prote
6	36	73.5	71	2 T43545	DNA-directed RNA p
7	36	73.5	71	2 C90129	Putative RNA polym
8	36	73.5	150	2 S47354	ribosomal protein
9	36	73.5	263	2 T32330	hypothetical prote
10	36	73.5	761	1 B64506	DNA topoisomerase
11	35	71.4	76	2 E64324	DNA-directed RNA p
12	35	71.4	88	2 T07013	glycine-rich prote
13	35	71.4	127	2 T20707	hypothetical prote
14	35	71.4	202	2 A53399	L6 antigen - mouse
15	35	71.4	243	2 S34794	osmotin - common t
16	35	71.4	385	2 T33038	hypothetical prote
17	35	71.4	709	1 TWBX55	transcription fact
18	35	71.4	859	2 T38168	hypothetical prote
19	35	71.4	959	2 T23094	hypothetical prote
20	35	71.4	961	2 T23095	hypothetical prote
21	35	71.4	2414	2 A54277	transcription adap
22	35	71.4	2440	2 S39162	transcription coac
23	35	71.4	2441	2 S39161	CREB-binding prote
24	35	71.4	3190	2 T13828	CREB-binding prote
25	34	69.4	73	1 ARRA56	allergen Ra56 prec
26	34	69.4	129	2 S69304	probable membrane
27	34	69.4	236	2 E97101	protein from bacte
28	34	69.4	418	2 S77640	exopolysaccharide
29	34	69.4	485	2 C86336	hypothetical prote

30 34 69.4 503 2 S31126 hypothetical prote
31 34 69.4 1484 2 T29275 hypothetical prote
32 34 69.4 1691 1 A44212 genome polyprotein
33 34 69.4 1693 1 MNWHE genome polyprotein
34 34 69.4 2025 2 T03884 hypothetical prote
35 34 69.4 4543 1 A53102 alpha-2-macroglobu
36 33 67.3 65 2 A75172 DNA-directed RNA p
37 33 67.3 76 2 A69391 ribosomal protein
38 33 67.3 98 1 S38604 probable DNA-direc
39 33 67.3 119 2 H71042 hypothetical prote
40 33 67.3 129 2 T47958 probable membrane
41 33 67.3 183 2 S56953 hypothetical prote
42 33 67.3 210 2 A65112 hypothetical prote
43 33 67.3 210 2 F91139 hypothetical prote
44 33 67.3 210 2 A85985 hypothetical prote
45 33 67.3 233 2 S31829 pathogenesis-relat

ALIGNMENTS

RESULT 1

G02066
biliverdin reductase (EC 1.3.1.24) - human
N:Alternate names: biliverdin IX-alpha reductase
C:Species: Homo sapiens (man)
C>Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 17-Jul-1998
C:Accession: G02066
R:Komuro, A.; Tobe, T.; Nakano, Y.; Yamaguchi, T.; Tomita, M.
submitted to the EMBL Data Library, August 1995
A:Reference number: H00768
A:Accession: G02066
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-296 <COM>
A:Cross-references: EMBL:U34877; MID:g1143231; PID:g1143232
C:Keywords: oxidoreductase

Query Match 100.0%; Score 49; DB 2; Length 296;
Best Local Similarity 100.0%; Pred. NO. 0.8;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QKYCCSRK 8
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Db 289 QKYCCSRK 296

RESULT 2

S62624
biliverdin reductase (EC 1.3.1.24) - human
N:Alternate names: biliverdin IX-alpha reductase
C:Species: Homo sapiens (man)
C>Date: 28-Oct-1996 #sequence_revision 09-May-1997 #text_change 21-Jul-2000
C:Accession: S62624; S62622; S29736
R:Maines, M.D.; Polevoda, B.V.; Huang, T.J.; McCoubrey Jr., W.K.
Eur. J. Biochem. 235, 372-381, 1996
A:Title: Human biliverdin IX-alpha reductase is a zinc-metalloprotein. Characterizati
A:Reference number: S62622; MUID:96202961
A:Accession: S62624
A:Molecule type: mRNA
A:Residues: 1-296 <MAI>
A:Cross-references: EMBL:X93086; MID:g1246748; PIDN:CAA63635.1; PID:g1246749
A:Accession: S62622
A:Molecule type: protein
A:Residues: 3-24, 'X', 26-27, 'X', 29-36; 48-74; 228-234; 235-248 <MAF>
R:Maines, M.D.; Trakshel, G.M.
Arch. Biochem. Biophys. 300, 320-326, 1993
A:Title: Purification and characterization of human biliverdin reductase.
A:Reference number: S29736; MUID:93143333
A:Accession: S29736
A:Molecule type: protein
A:Residues: 3-24, 'X', 26-27, 'X', 29-36; 48-74; 228-234; 235-248 <MAW>
A:Note: the sequence of peptide 1 from page 323 seems not to belong to this protein

C;Genetics:
A;Gene: BVR
C;Keywords: oxidoreductase
F;3-296/Product: biliverdin reductase IX-alpha #status experimental <MAT>

Query Match 100.0%; Score 49; DB 2; Length 296;
Best Local Similarity 100.0%; Pred. No. 0.8;
Matches 8; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
|:|||||
Db 289 QKYCCSRK 296

RESULT 3
S23215
hypothetical protein 1 - Photobacterium sp.
C;Species: Photobacterium sp.
C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 08-Oct-1999
C;Accession: S23215
R;Bartlett, D.H.; Chi, E.; Wright, M.E.
submitted to the EMBL Data Library, June 1992
A;Description: Nucleotide sequence of the OMPH gene and construction of an OMPH mutant
A;Reference number: S23213
A;Accession: S23215
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-151 <BAR>
A;Cross-references: EMBL:X67094; NID:g45887; PIDN:CAA47468.1; PID:g45890

Query Match 77.6%; Score 38; DB 2; Length 151;
Best Local Similarity 62.5%; Pred. No. 28;
Matches 5; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
|:|||||
Db 119 QRYCCNKH 126

RESULT 4
B82148
ATP-dependent helicase, Dmg family VC1855 [imported] - Vibrio cholerae (strain N16961)
C;Species: Vibrio cholerae
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 02-Feb-2001
C;Accession: B82148
R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R.J.;
Chardson, D.; Esmolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, H.; Dragoi, I.; Sellers, H.
1, R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser, C.M.
Nature 406, 477-483, 2000
A;Title: DNA Sequence of both chromosomes of the cholera pathogen Vibrio cholerae.
A;Reference number: A82035; MUID:20406833
A;Accession: B82148
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-703 <HEI>
A;Cross-references: GB:AE004261; GB:AE003852; NID:g9656382; PIDN:AAF95003.1; GSPDB:GN001
A;Experimental source: serogroup O1; strain N16961; biotype El Tor
C;Genetics:
A;Gene: VC1855
A;Map position: 1

Query Match 77.6%; Score 38; DB 2; Length 703;
Best Local Similarity 62.5%; Pred. No. 73;
Matches 5; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
|:|||||
Db 131 QRYCCSR 138

RESULT 5
T27220
hypothetical protein Y57G11C.7 - Caenorhabditis elegans

C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T27220
R;McMurray, A.
submitted to the EMBL Data Library, September 1997
A;Reference number: Z20330
A;Accession: T27220
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-571 <WIL>
A;Cross-references: EMBL:Z99281; PIDN:CAB16509.1; GSPDB:GN000022; CESP:Y57G11C.7
A;Experimental source: clone Y57G11C
C;Genetics:
A;Gene: CESP:Y57G11C.7
A;Map position: 4
A;Introns: 72/2; 155/3; 214/1; 249/3; 279/3

Query Match 75.5%; Score 37; DB 2; Length 571;
Best Local Similarity 62.5%; Pred. No. 92;
Matches 5; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
|:|||||
Db 192 RKYCCPRR 199

RESULT 6
T43545
DNA-directed RNA polymerase (EC 2.7.7.6) II chain Rpb10 - fission yeast (Schizosacchara
C;Species: Schizosaccharomyces pombe
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 03-Nov-2000
C;Accession: T43545; T38031; T52005
R;Shpakovski, G.V.; Lebedenko, E.N.; Proshkin, S.A.
submitted to the EMBL Data Library, October 1997
A;Reference number: Z22564
A;Accession: T43545
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-71 <SHP>
A;Cross-references: EMBL:AF027818; PIDN:AAC16895.1
A;Experimental source: strain 972(-)
R;Murphy, L.; Harris, D.; Barrell, B.G.; Rajandream, M.A.; Wood, V.
submitted to the EMBL Data Library, August 1997
A;Reference number: Z21763
A;Accession: T38031
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-71 <MUR>
A;Cross-references: EMBL:Z98598; PIDN:CAB11246.1; GSPDB:GN000066; SPDB:SPAC1B3.12C
A;Experimental source: strain 972h-; cosmid c1B3
R;Sakurai, H.; Ishihama, A.
Gene 196, 165-174, 1997
A;Title: Gene organization and protein sequence of the small subunits of Schizosaccha
A;Reference number: Z25897; MUID:97464063
A;Accession: T52005
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-71 <SAK>
A;Cross-references: EMBL:D89596; PIDN:BAA22805.1
A;Experimental source: strain JY741
C;Genetics:
A;Gene: rpb10; SPAC1B3.12C
A;Map position: 1
A;Introns: 12/3; 64/1
A;Note: rpb10
C;Superfamily: DNA-directed RNA polymerase II chain RPB10
C;Keywords: nucleotidyltransferase; transcription

Query Match 73.5%; Score 36; DB 2; Length 71;
Best Local Similarity 71.4%; Pred. No. 36;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSR 7

Db 41 QRYCCRR 47
|||||

RESULT 7

C90129

Putative RNA polymerase II subunit Rpb10 [imported] - Guillardia theta nucleomorph
C:Species: nucleomorph Guillardia theta
A:Title: a nucleomorph is the vestigial nucleus of a eukaryotic endosymbiont
C:Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 24-May-2001
C:Accession: C90129

R:Douglas, S.; Zauner, S.; Fraunholz, M.; Beaton, M.; Penny, S.; Deng, L.T.; Wu, X.; Reijnders, W.J.; et al. 1999. Nature 410, 1091-1096, 2001
A:Title: The highly reduced genome of an enslaved algal nucleus.
A:Reference number: A99082; MUID:11323671

A:Accession: C90129

A:Status: preliminary

A:Molecule type: DNA

A:Residues: 1-71 <DOU>

A:Cross-references: GB:AF083031; NID:gl3794349; PIDN:AAK39726.1; GSPDB:GN00152

C:Genetics:

A:Gene: rpb10

A:Map position: 3

A:Genome: nucleomorph

C:Keywords: nucleomorph

Query Match 73.5%; Score 36; DB 2; Length 71;
Best Local Similarity 71.4%; Pred. No. 36;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSR 7

|||||

Db 41 QRYCCRR 47

RESULT 8

S47354

ribosomal protein L18a homolog - human (fragment)

C:Species: Homo sapiens (man)

C:Date: 06-Jan-1995 #sequence_revision 24-Oct-1997 #text_change 05-Nov-1999

C:Accession: S47354

R:Zenz, K.I.

submitted to the EMBL Data Library, August 1994

A:Reference number: S47353

A:Accession: S47354

A:Molecule type: mRNA

A:Residues: 1-150 <ZEN>

A:Cross-references: EMBL:X80821; NID:g527579; PIDN:CAA56787.1; PID:g527580

Query Match 73.5%; Score 36; DB 2; Length 150;
Best Local Similarity 75.0%; Pred. No. 57;
Matches 6; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8

|||||

Db 135 QKYCCLLK 142

RESULT 9

T32530

hypothetical protein CD4.7 - Caenorhabditis elegans

C:Species: Caenorhabditis elegans

C:Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 29-Oct-1999

C:Accession: T32530

R:Du, Z.; Scheet, P.

submitted to the EMBL Data Library, December 1997

A:Description: The sequence of C. elegans cosmid CD4.

A:Reference number: Z21185

A:Accession: T32530

A:Status: preliminary; translated from GB/EMBL/DDBJ

A:Molecule type: DNA

A:Residues: 1-263 <DUZ>

A:Cross-references: EMBL:AF036694; PIDN:AAB88345.1; GSPDB:GN00022; CESP:CD4.7

A:Experimental source: strain Bristol N2; clone CD4

C:Genetics:

A:Gene: CESP:CD4.7

A:Map position: 4

A:Introns: 121/3; 156/1; 243/2

Query Match 73.5%; Score 36; DB 2; Length 263;
Best Local Similarity 83.3%; Pred. No. 81;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KYCCSR 7

|||||

Db 234 KYCCTR 239

RESULT 10

B64506

DNA topoisomerase (EC 5.99.1.2) - Methanococcus jannaschii

N:Alternate names: topoisomerase I

C:Species: Methanococcus jannaschii

C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 21-Jul-2000

C:Accession: B64506

R:Bult, C.J.; White, O.; Olsen, G.J.; Zhou, L.; Fleischmann, R.D.; Sutton, G.G.; Blak
rson, J.D.; Sadow, P.W.; Hanna, M.C.; Cotton, M.D.; Roberts, K.M.; Hurst, M.A.
Science 273, 1058-1073, 1996

A:Authors: Kaine, B.P.; Borodovsky, M.; Klenk, H.P.; Fraser, C.M.; Smith, H.O.; Woese

A:Title: Complete genome sequence of the methanogenic archaeon, Methanococcus jannasc

A:Reference number: A64300; MUID:96337999

A:Accession: B64506

A:Status: preliminary; nucleic acid sequence not shown; translation not shown

A:Molecule type: DNA

A:Residues: 1-761 <BUL>

A:Cross-references: GB:U67605; GB:L77117; NID:gl592227; PIDN:AAB99673.1; PID:gl592234

C:Genetics:

A:Map position: FOR1633497-1635782

A:Start codon: GTG

C:Superfamily: DNA topoisomerase I topA

C:Keywords: isomerase

Query Match 73.5%; Score 36; DB 1; Length 761;
Best Local Similarity 71.4%; Pred. No. 1.6e+02;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 KYCCSRK 8

|||||

Db 125 KYCCGR 131

RESULT 11

E64324

DNA-directed RNA polymerase (EC 2.7.7.6) subunit N - Methanococcus jannaschii

C:Species: Methanococcus jannaschii

C:Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 23-Apr-1999

C:Accession: E64324

R:Bult, C.J.; White, O.; Olsen, G.J.; Zhou, L.; Fleischmann, R.D.; Sutton, G.G.; Blak
rson, J.D.; Sadow, P.W.; Hanna, M.C.; Cotton, M.D.; Roberts, K.M.; Hurst, M.A.
Science 273, 1058-1073, 1996

A:Authors: Kaine, B.P.; Borodovsky, M.; Klenk, H.P.; Fraser, C.M.; Smith, H.O.; Woese

A:Title: Complete genome sequence of the methanogenic archaeon, Methanococcus jannasc

A:Reference number: A64300; MUID:96337999

A:Accession: E64324

A:Status: preliminary; nucleic acid sequence not shown; translation not shown

A:Molecule type: DNA

A:Residues: 1-76 <BUL>

A:Cross-references: GB:U67475; GB:L77117; NID:gl590930; PID:gl590941; TIGR:MJ0196; PI

C:Genetics:

A:Map position: FOR190573-190803

A:Start codon: GTG

C:Superfamily: DNA-directed RNA polymerase II chain RPB10

C:Keywords: nucleotidyltransferase; transcription

Query Match 71.4%; Score 35; DB 2; Length 76;
Best Local Similarity 71.4%; Pred. No. 53;
Matches 5; Conservative 1; Mismatches 0; Gaps 0;

QY 1 QKYCCSR 7
:|||||
Db 44 KKYCCRR 50

RESULT 12

T07013
N;glycine-rich protein precursor - tomato
N;Alternate names: cell wall protein
C;Species: Lycopersicon esculentum (tomato)
C;Date: 30-Apr-1999 #sequence_revision 30-Apr-1999 #text_change 11-May-2000
C;Accession: T07013
R;Domingo, C.; Gomez, M.D.; Canas, L.; Hernandez-Yago, J.; Conejero, V.; Vera, P.
Plant Cell 6, 1035-1047, 1994
A;Title: A novel extracellular matrix protein from tomato plant associated with lignification
A;Reference number: Z15861; MUID:95003699
A;Accession: T07013
A;Status: preliminary; translated from GB/EMBL/DDBBJ
A;Molecule type: mRNA
A;Residues: 1-88 <DOM>
A;Cross-references: EMBL:X77373; NID:g541681; PIDN:CAA54561.1; PID:g541682
A;Experimental source: cultivar Rutgers; expanded laeves
F;1-25/Domain: signal sequence #status predicted <SIG>
F;26-88/Product: glycine-rich protein #status predicted <MAT>

Query Match 71.4%; Score 35; DB 2; Length 88;
Best Local Similarity 83.3%; Pred. No. 58;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCS 6
:|||||
Db 72 KKYCCS 77

RESULT 13

T20707
Hypothetical protein F10D11.3 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T20707
R;Dobson, R.
submitted to the EMBL Data Library, October 1996
A;Reference number: Z19312
A;Accession: T20707
A;Status: preliminary; translated from GB/EMBL/DDBBJ
A;Molecule type: DNA
A;Residues: 1-127 <WIL>
A;Cross-references: EMBL:Z81057; PIDN:CAB02915.1; GSPDB:GN000019; CESP:F10D11.3
A;Experimental source: clone F10D11
C;Genetics:
A;Gene: CESP:F10D11.3
A;Map position: 1
A;Introns: 22/3; 52/3; 98/3

Query Match 71.4%; Score 35; DB 2; Length 127;
Best Local Similarity 83.3%; Pred. No. 74;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 3 YCCSRK 8
:|||||
Db 118 FCCSRK 123

RESULT 14

A53399
L6 antigen - mouse
C;Species: Mus musculus (house mouse)
C;Date: 12-May-1994 #sequence_revision 12-May-1994 #text_change 05-Nov-1999
C;Accession: A53399

R;Marken, J.S.; Bajorath, J.; Edwards, C.P.; Farr, A.G.; Schieven, G.L.; Hellstroem, J. Biol. Chem. 269, 7397-7401, 1994
A;Title: Membrane topology of the I6 antigen and identification of the protein epitope
A;Reference number: A53399; MUID:94171760
A;Accession: A53399
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-202 <MAR>
A;Cross-references: GB:I15429; NID:g468909; PIDN:AAA17873.1; PID:g476343

Query Match 71.4%; Score 35; DB 2; Length 202;
Best Local Similarity 83.3%; Pred. No. 99;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 3 YCCSRK 8
:|||||
Db 192 YCCSRQ 197

RESULT 15

S34794
Osmotin - common tobacco
C;Species: Nicotiana tabacum (common tobacco)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 20-Aug-1999
C;Accession: S34794; S37294
R;Singh, N.K.; Nelson, D.E.; Kuhn, D.; Hasegawa, P.M.; Bressan, R.A.
Plant Physiol. 90, 1096-1101, 1989
A;Title: Molecular cloning of osmotin and regulation of its expression by ABA and ada
A;Reference number: S34794
A;Accession: S34794
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-243 <SIN>
A;Cross-references: EMBL:M29279
R;Singh, N.K.; Nelson, D.E.; Kuhn, D.; Hasegawa, P.M.; Bressan, R.A.
submitted to the EMBL Data Library, February 1990
A;Reference number: S37294
A;Accession: S37294
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-128, 'I', 130-243 <SI2>
A;Cross-references: EMBL:M29279; NID:gl70278; PIDN:AAA34089.1; PID:gl70279
C;Superfamily: thaumatin I

Query Match 71.4%; Score 35; DB 2; Length 243;
Best Local Similarity 50.0%; Pred. No. 11e+02;
Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 QKYCCSRK 8
:|||||
Db 171 QKYCCTQR 178

Search completed: November 1, 2002, 14:51:03
Job time : 3.01554 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:44:48 ; Search time 0.66881 Seconds
(without alignments)
292.168 Million cell updates/sec

Title: US-09-606-129A-35
Perfect score: 49
Sequence: 1 QKYCCSRK 8

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA.*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep.*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep.*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep.*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep.*
5: /cgn2_6/ptodata/1/iaa/PCRU5_COMB.pep.*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	36	73.5	109	2	US-08-527-044-2
2	36	73.5	109	3	US-09-013-780-2
3	35	71.4	202	2	US-08-855-261A-4
4	35	71.4	202	3	US-08-839-711-4
5	35	71.4	202	4	US-09-227-224-4
6	35	71.4	2414	1	US-08-227-336-2
7	35	71.4	2414	5	PCT-US95-04682-2
8	35	71.4	2441	1	US-08-194-468-2
9	35	71.4	2441	3	US-08-961-739-2
10	34	69.4	117	3	US-08-965-903B-6
11	34	69.4	139	3	US-08-965-903B-20
12	34	69.4	174	4	US-09-383-586-12
13	34	69.4	1693	3	US-08-840-316-1
14	34	69.4	1693	4	US-08-478-507-7
15	34	69.4	1693	4	US-08-809-523-1
16	34	69.4	1693	4	US-09-128-275A-7
17	34	69.4	1693	4	US-08-471-971-1
18	34	69.4	1693	5	PCT-US93-08849A-1
19	34	69.4	1693	5	PCT-US93-08849-1
20	33	67.3	24	4	US-08-857-076-85
21	33	67.3	205	4	US-08-857-076-113
22	33	67.3	226	1	US-07-828-798C-7
23	33	67.3	226	2	US-08-315-868A-7
24	33	67.3	226	3	US-08-495-819B-7
25	33	67.3	246	1	US-07-828-798C-6
26	33	67.3	246	2	US-08-315-868A-6
27	33	67.3	246	3	US-08-495-819B-6

28 33 67.3 332 1 US-08-118-270-53 Sequence 53, Appl
29 33 67.3 332 5 PCT-US93-08528-53 Sequence 53, Appl
30 33 67.3 796 4 US-08-857-076-40 Sequence 40, Appl
31 33 67.3 858 4 US-08-857-076-41 Sequence 41, Appl
32 33 67.3 892 4 US-08-857-076-42 Sequence 42, Appl
33 32 65.3 27 1 US-08-619-936-1 Sequence 1, Appl
34 32 65.3 154 1 US-08-463-262A-9 Sequence 9, Appl
35 32 65.3 154 1 US-08-463-989-9 Sequence 9, Appl
36 32 65.3 154 4 US-09-003-574-9 Sequence 9, Appl
37 32 65.3 154 4 US-09-003-574-9 Sequence 9, Appl
38 32 65.3 438 3 US-08-486-099-93 Sequence 93, Appl
39 32 65.3 438 3 US-08-360-107A-103 Sequence 103, App
40 32 65.3 438 3 US-08-484-223B-93 Sequence 93, Appl
41 32 65.3 438 3 US-08-919-597-93 Sequence 93, Appl
42 32 65.3 438 3 US-08-475-668A-93 Sequence 93, Appl
43 32 65.3 438 3 US-08-485-551A-93 Sequence 93, Appl
44 32 65.3 438 3 US-08-471-913A-93 Sequence 93, Appl
45 32 65.3 438 4 US-08-485-264A-93 Sequence 93, Appl

ALIGNMENTS

RESULT 1
US-08-527-044-2
; Sequence 2, Application US/08527044
; Patent No. 5885568
; GENERAL INFORMATION:
; APPLICANT: BUMSTEAD, Janene Marilyn J.M.
; APPLICANT: TOMLEY, Fiona Margaret F.
; APPLICANT: DUNN, Patrick Paul James P.
; APPLICANT: VERMEULEN, Arnoldus Nicolaas A.N.
; TITLE OF INVENTION: Coccidiosis poultry vaccine
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Akzo No. 5885568el N.V
; STREET: 1300 PICCARD DRIVE #206
; CITY: Rockville
; STATE: Maryland
; COUNTRY: USA
; ZIP: 20850-4373
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/527.044
; FILING DATE: 12-SEP-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: EP 94202667.6
; FILING DATE: 16-SEP-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: GORMLEY, MARY E.
; REGISTRATION NUMBER: 34, 409
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 109 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-527-044-2

Query Match 73.5%; Score 36; DB 2; Length 109;
Best Local Similarity 83.3%; Pred. No. 43;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KYCCSR 7
|||||
Db 22 KYCCSK 27

RESULT 2

```

US-09-013-780-2
; Sequence 2, Application US/09013780
; Patent No. 6001363
; GENERAL INFORMATION:
; APPLICANT: BUNSTEAD, Janene Marilyn J.M.
; APPLICANT: TOMLEY, Fiona Margaret F.
; APPLICANT: DUNN, Patrick Paul James P.
; APPLICANT: VERMEULEN, Arnoldus Nicolaas A.N.
; TITLE OF INVENTION: Coccidiosis poultry vaccine
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Akzo No. 6001363el N.V
; STREET: 1300 PICCARD DRIVE #206
; CITY: Rockville
; STATE: Maryland
; COUNTRY: USA
; ZIP: 20850-4373
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/013,780
; FILING DATE:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/527,044
; FILING DATE: 12-SEP-1995
; ATTORNEY/AGENT INFORMATION:
; NAME: GORMLEY, MARY E.
; REGISTRATION NUMBER: 34,409
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 109 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-09-013-780-2

Query Match 73.5%; Score 36; DB 3; Length 109;
Best Local Similarity 83.3%; Pred. No. 43;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 2 KYCCSR 7
Db 22 KYCCSK 27

RESULT 3
US-08-855-261A-4
; Sequence 4, Application US/08855261A
; Patent No. 5922566
; GENERAL INFORMATION:
; APPLICANT: Bandman, Olga
; APPLICANT: Goli, Surya K.
; APPLICANT: Shah, Purvi
; APPLICANT: Corley, Neil C.
; TITLE OF INVENTION: NEW TUMOR-ASSOCIATED ANTIGEN
; NUMBER OF SEQUENCES: 4
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Incyte Pharmaceuticals, Inc.
; STREET: 3174 Porter Drive
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94304
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSeq for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/839,711
; FILING DATE: Filed Herewith
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Billings, Lucy J.
; REGISTRATION NUMBER: 36,749
; REFERENCE/DOCKET NUMBER: PF-0270 US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-855-0555
; TELEFAX: 415-845-4166
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 202 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; IMMEDIATE SOURCE:
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/855,261A

US-09-013-780-2
; Sequence 2, Application US/09013780
; Patent No. 6001363
; GENERAL INFORMATION:
; APPLICANT: BUNSTEAD, Janene Marilyn J.M.
; APPLICANT: TOMLEY, Fiona Margaret F.
; APPLICANT: DUNN, Patrick Paul James P.
; APPLICANT: VERMEULEN, Arnoldus Nicolaas A.N.
; TITLE OF INVENTION: Coccidiosis poultry vaccine
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Akzo No. 6001363el N.V
; STREET: 1300 PICCARD DRIVE #206
; CITY: Rockville
; STATE: Maryland
; COUNTRY: USA
; ZIP: 20850-4373
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/013,780
; FILING DATE:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/527,044
; FILING DATE: 12-SEP-1995
; ATTORNEY/AGENT INFORMATION:
; NAME: GORMLEY, MARY E.
; REGISTRATION NUMBER: 34,409
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 109 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-09-013-780-2

Query Match 71.4%; Score 35; DB 2; Length 202;
Best Local Similarity 83.3%; Pred. No. 1e+02;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 3 YCCSRK 8
Db 192 YCCSRQ 197

RESULT 4
US-08-839-711-4
; Sequence 4, Application US/08839711
; Patent No. 6033870
; GENERAL INFORMATION:
; APPLICANT: Hillman, Jennifer L.
; APPLICANT: Shah, Purvi
; TITLE OF INVENTION: NOVEL HUMAN TRANSMEMBRANE
; TITLE OF INVENTION: PROTEIN
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Incyte Pharmaceuticals, Inc.
; STREET: 3174 Porter Drive
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94304
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSeq for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/839,711
; FILING DATE: Filed Herewith
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Billings, Lucy J.
; REGISTRATION NUMBER: 36,749
; REFERENCE/DOCKET NUMBER: PF-0270 US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-855-0555
; TELEFAX: 415-845-4166
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 202 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; IMMEDIATE SOURCE:
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/855,261A-4

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; LIBRARY: GenBank
; CLONE: 476343
; US-08-839-711-4

Query Match 71.4%; Score 35; DB 3; Length 202;
Best Local Similarity 83.3%; Pred. No. 1e+02;
Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 3 YCCSRK 8

|||||

Db 192 YCCSRQ 197

RESULT 5

US-09-227-224-4

; Sequence 4, Application US/09227224

; Patent No. 6350581

; GENERAL INFORMATION:

; APPLICANT: Bandman, Olga

; APPLICANT: Goli, Surya K.

; APPLICANT: Shah, Purvi

; APPLICANT: Corley, Neil C.

; TITLE OF INVENTION: NEW TUMOR-ASSOCIATED ANTIGEN

; NUMBER OF SEQUENCES: 4

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Incyte Pharmaceuticals, Inc.

; STREET: 3174 Porter Drive

; CITY: Palo Alto

; STATE: CA

; COUNTRY: USA

; ZIP: 94304

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Diskette

; COMPUTER: IBM Compatible

; OPERATING SYSTEM: DOS

; SOFTWARE: FastSeq for Windows Version 2.0

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/09/227,224

; FILING DATE:

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: 08/855,261

; FILING DATE:

; ATTORNEY/AGENT INFORMATION:

; NAME: Billings, Lucy J.

; REGISTRATION NUMBER: 36,749

; REFERENCE/DOCKET NUMBER: PF-0298 US

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 415-855-0555

; TELEFAX: 415-845-4166

; INFORMATION FOR SEQ ID NO: 4:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 202 amino acids

; TYPE: amino acid

; STRANDEDNESS: single

; TOPOLOGY: linear

; IMMEDIATE SOURCE:

; LIBRARY: GenBank

; CLONE: 476343

US-09-227-224-4

Query Match

Best Local Similarity 71.4%; Score 35; DB 4; Length 202;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 3 YCCSRK 8

|||||

Db 192 YCCSRQ 197

RESULT 6

US-08-227-536-2

; Sequence 2, Application US/08227536

; Patent No. 5658784

; GENERAL INFORMATION:
; APPLICANT: Eckner, Richard
; APPLICANT: Ewen, Mark
; APPLICANT: Livingston, David
; TITLE OF INVENTION: NUCLEIC ACID, ENCODING TRANSCRIPTION
; TITLE OF INVENTION: FACTOR P300 AND USES OF P300
; NUMBER OF SEQUENCES: 13
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Weingarten, Schurgin, Gagnebin & Hayes
; STREET: Ten Post Office Square
; CITY: Boston
; STATE: MA
; COUNTRY: US
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/227,536
; FILING DATE: 14-APR-1994
; CLASSIFICATION: 436
; ATTORNEY/AGENT INFORMATION:
; NAME: Williams Ph.D., Kathleen A.
; REGISTRATION NUMBER: 34,380
; REFERENCE/DOCKET NUMBER: DFCI-308XX
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (617) 542-2290
; TELEFAX: (617) 451-0313
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 2414 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-227-536-2

Query Match 71.4%; Score 35; DB 1; Length 2414;

Best Local Similarity 83.3%; Pred. No. 8e+02;

Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 3 YCCSRK 8

|||||

Db 1162 YCCGRK 1167

RESULT 7

PCT-US95-04682-2

; Sequence 2, Application PC/TUS9504682

; GENERAL INFORMATION:

; APPLICANT:

; TITLE OF INVENTION: NUCLEIC ACID ENCODING TRANSCRIPTION

; TITLE OF INVENTION: FACTOR P300 AND USES OF P300

; NUMBER OF SEQUENCES: 13

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Weingarten, Schurgin, Gagnebin & Hayes

; STREET: Ten Post Office Square

; CITY: Boston

; STATE: MA

; COUNTRY: US

; ZIP: 02109

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: PatentIn Release #1.0, Version #1.25

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: PCT/US95/04682

; FILING DATE:

; CLASSIFICATION:

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: US 08/227,536

; FILING DATE: 14-April-1994
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Holliday C. Heine, Ph.D.
; REGISTRATION NUMBER: 34,346
; REFERENCE/DOCKET NUMBER: DFCI-308Xq999
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (617) 542-2290
; TELEFAX: (617) 451-0313
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 2414 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
PCT-US95-04682-2

Query Match 71.4%; Score 35; DB 5; Length 2414;
Best Local Similarity 83.3%; Pred. No. 8e+02;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 3 YCCSRK 8
||| ||

Db 1162 YCCGRK 1167

RESULT 8
US-08-194-468-2
; Sequence 2, Application US/08194468
; Patent No. 5750336
; GENERAL INFORMATION:
; APPLICANT: Montminy, Marc R.
; TITLE OF INVENTION: ASSAYS FOR THE IDENTIFICATION OF
; TITLE OF INVENTION: COMPOUNDS WHICH INHIBIT ACTIVATION OF CAMP AND MITOGEN
; TITLE OF INVENTION: RESPONSIVE GENES
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pretty, Schroeder, Brueggemann & Clark
; STREET: 444 South Flower Street, Suite 2000
; CITY: Los Angeles
; STATE: California
; COUNTRY: USA
; ZIP: 90071
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/194,468
; FILING DATE: 10-FEB-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Reiter, Stephen E.
; REGISTRATION NUMBER: 31,192
; REFERENCE/DOCKET NUMBER: P41 9672
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (619)-546-4737
; TELEFAX: (619)-546-9392
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 2441 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-194-468-2

Query Match 71.4%; Score 35; DB 1; Length 2441;
Best Local Similarity 83.3%; Pred. No. 8e+02;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 3 YCCSRK 8
||| ||

Db 1199 YCCGRK 1204

RESULT 9
US-08-961-739-2
; Sequence 2, Application US/08961739A
; Patent No. 6063583
; GENERAL INFORMATION:
; APPLICANT: Montminy, Marc R.
; TITLE OF INVENTION: Methods for Treating Diabetes Mellitus
; FILE REFERENCE: SALK1650-1
; CURRENT APPLICATION NUMBER: US/08/961,739A
; CURRENT FILING DATE: 1997-10-31
; EARLIER APPLICATION NUMBER: US 194,468
; EARLIER FILING DATE: 1994-02-10
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 2
; LENGTH: 2441
; TYPE: PRT
; ORGANISM: Mus
; FEATURE:
; NAME/KEY: VARIANT
; LOCATION: (1)...(2441)
; OTHER INFORMATION: Xaa = Any Amino Acid
US-08-961-739-2

Query Match 71.4%; Score 35; DB 3; Length 2441;
Best Local Similarity 83.3%; Pred. No. 8e+02;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 3 YCCSRK 8
||| ||

Db 1199 YCCGRK 1204

RESULT 10
US-08-965-903B-6
; Sequence 6, Application US/08965903B
; Patent No. 6060275
; GENERAL INFORMATION:
; APPLICANT: Hacothen, Nir
; APPLICANT: Krasnow, Mark A.
; TITLE OF INVENTION: SPROUTY PROTEIN AND CODING
; TITLE OF INVENTION: SEQUENCE
; NUMBER OF SEQUENCES: 20
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Ave., Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: DOS
; SOFTWARE: FastSeq for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/965,903B
; FILING DATE: 07-NOV-1997
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/030232
; FILING DATE: 07-NOV-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Petithory, Joanne R
; REGISTRATION NUMBER: 42,995
; REFERENCE/DOCKET NUMBER: 8600-0177.30
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-324-0880
; TELEFAX: 650-324-0960
; TELEX:

INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 117 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: h-spryl cysteine-rich region
US-08-965-903B-6

Query Match 69.4%; Score 34; DB 3; Length 117;
Best Local Similarity 71.4%; Pred. No. 91;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKYCCSR 7
| :||||
Db 70 QSHCCSR 76

RESULT 11

US-08-965-903B-20
Sequence 20, Application US/08965903B
Patent No. 6060275
GENERAL INFORMATION:

APPLICANT: Hacothen, Nir
APPLICANT: Krasnow, Mark A.
TITLE OF INVENTION: SPROUTY PROTEIN AND CODING
TITLE OF INVENTION: SEQUENCE
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:

ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Ave., Suite 250
CITY: Palo Alto
STATE: CA
COUNTRY: USA
ZIP: 94306

COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/965,903B
FILING DATE: 07-NOV-1997
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/030232
FILING DATE: 07-NOV-1996
ATTORNEY/AGENT INFORMATION:
NAME: Petithory, Joanne R
REGISTRATION NUMBER: 42,995
REFERENCE/DOCKET NUMBER: 8600-0177,30
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-324-0880
TELEFAX: 650-324-0960
TELEX:

INFORMATION FOR SEQ ID NO: 20:

SEQUENCE CHARACTERISTICS:
LENGTH: 139 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
FRAGMENT TYPE: internal
ORIGINAL SOURCE:
INDIVIDUAL ISOLATE: h-spryl
US-08-965-903B-20

Query Match 69.4%; Score 34; DB 3; Length 139;
Best Local Similarity 71.4%; Pred. No. 1e+02;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKYCCSR 7
| :||||
Db 70 QSHCCSR 76

RESULT 12

US-09-383-586-12
Sequence 12, Application US/09383586
Patent No. 6242419
GENERAL INFORMATION:

APPLICANT: Strachan, Lorna
APPLICANT: Sleeman, Matthew
APPLICANT: Abernethy, Nevin
APPLICANT: Onrust, Rene
APPLICANT: Kumble, Anand
APPLICANT: Murison, Greg

TITLE OF INVENTION: Compounds isolated from stromal cells
TITLE OF INVENTION: and methods for their use
FILE REFERENCE: 11000.1037c1
CURRENT APPLICATION NUMBER: US/09/383,586
CURRENT FILING DATE: 1999-08-26
NUMBER OF SEQ ID NOS: 38

SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 12
LENGTH: 174
TYPE: PRT
ORGANISM: Mouse

US-09-383-586-12

Query Match 69.4%; Score 34; DB 4; Length 174;
Best Local Similarity 83.3%; Pred. No. 1.3e+02;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 3 YCCSRK 8
||| ||
Db 116 YCCRRK 121

RESULT 13

US-08-840-316-1
Sequence 1, Application US/08840316
Patent No. 6054567
GENERAL INFORMATION:

APPLICANT: Emerson, Suzanne U., Purcell, Robert H.,

APPLICANT: Tsarev, Sergei. A., and Robinson, Robin A.

TITLE OF INVENTION: Recombinant Proteins Of

TITLE OF INVENTION: A Pakistani Strain Of Hepatitis E And Their

TITLE OF INVENTION: Use In Diagnostic Methods And Vaccines

NUMBER OF SEQUENCES: 111

CORRESPONDENCE ADDRESS:

ADDRESSEE: MORGAN & FINNEGAN

STREET: 345 PARK AVENUE

CITY: NEW YORK

STATE: NEW YORK

COUNTRY: USA

ZIP: 10154

COMPUTER READABLE FORM:

MEDIUM TYPE: FLOPPY DISK

COMPUTER: IBM PC COMPATIBLE

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WORDPERFECT 5.1

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/840,316

FILING DATE: 11-APR-1997

CLASSIFICATION: 424

PRIOR APPLICATION DATA:

APPLICATION NUMBER:

FILING DATE:

CLASSIFICATION: 424

ATTORNEY/AGENT INFORMATION:

NAME: Richard W. Bork

REGISTRATION NUMBER: 36,459

REFERENCE/DOCKET NUMBER: 2026-4255

TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 758-4800
TELEFAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1693 AMINO ACID RESIDUES
TYPE: AMINO ACID
STRANDEDNESS: UNKNOWN
TOPOLOGY: UNKNOWN
US-08-840-316-1

Query Match 69.4%; Score 34; DB 3; Length 1693;
Best Local Similarity 71.4%; Pred. No. 8.3e+02;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSR 7
| :||||
Db 333 QAFCCSR 339

RESULT 14
US-08-478-507-7
; Sequence 7, Application US/08478507
; Patent No. 6120988
; GENERAL INFORMATION:
; APPLICANT: Reyes, Gregory R
; APPLICANT: Yarbough, Patrice O
; APPLICANT: Bradley, Daniel W
; APPLICANT: Krawczynski, Krzysztof Z
; APPLICANT: Tam, Albert
; APPLICANT: Fry, Kirk E
; TITLE OF INVENTION: DNA Sequences of Enterically Transmitted
; TITLE OF INVENTION: No. 6120988-A/No. 6120988-B Hepatitis Viral Agent
; NUMBER OF SEQUENCES: 20
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dehlinger & Associates
; STREET: 350 Cambridge Avenue, Suite 250
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94306
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/478,507
; FILING DATE: 07-JUN-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/279,823
; FILING DATE: 25-JUL-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/681,078
; FILING DATE: 05-APR-1991
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/505,888
; FILING DATE: 05-APR-1990
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/420,921
; FILING DATE: 13-OCT-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/367,486
; FILING DATE: 16-JUN-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/336,672
; FILING DATE: 11-APR-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/208,997
; FILING DATE: 17-JUN-1988
; ATTORNEY/AGENT INFORMATION:
; NAME: Sholtz, Charles K.
; REGISTRATION NUMBER: 38,615

REFERENCE/DOCKET NUMBER: 4600-0183.22
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 324-0880
TELEFAX: (650) 324-0960
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 1693 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-478-507-7

Query Match 69.4%; Score 34; DB 3; Length 1693;
Best Local Similarity 71.4%; Pred. No. 8.3e+02;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QKYCCSR 7
| :||||
Db 333 QAFCCSR 339

RESULT 15
US-08-809-523-1
; Sequence 1, Application US/08809523
; Patent No. 6207416
; GENERAL INFORMATION:
; APPLICANT: Tsarev, Sergei A., Emerson,
; APPLICANT: Suzanne U., Purcell, Robert H.
; TITLE OF INVENTION: Recombinant Proteins Of
; TITLE OF INVENTION: A Pakistani Strain Of Hepatitis E And Their
; TITLE OF INVENTION: Use In Diagnostic Methods And Vaccines
; NUMBER OF SEQUENCES: 107
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: MORGAN & FINNEGAN, L.L.P.
; STREET: 345 PARK AVENUE
; CITY: NEW YORK
; STATE: NEW YORK
; COUNTRY: USA
; ZIP: 10154
; COMPUTER READABLE FORM:
; MEDIUM TYPE: FLOPPY DISK
; COMPUTER: IBM PC COMPATIBLE
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WORDPERFECT 5.1
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/809,523
; FILING DATE: 28-MAY-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/US95/13102
; FILING DATE: 03-OCT-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US08/316,765
; FILING DATE: 03-OCT-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/947,263
; FILING DATE: 18-SEP-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Richard W. Bork
; REGISTRATION NUMBER: 36,459
; REFERENCE/DOCKET NUMBER: 2026-40320S4
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 758-4800
; TELEFAX: (212) 751-6849
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 1693 AMINO ACID RESIDUES
; TYPE: AMINO ACID
; STRANDEDNESS: UNKNOWN
; TOPOLOGY: UNKNOWN
US-08-809-523-1
Query Match 69.4%; Score 34; DB 4; Length 1693;
Best Local Similarity 71.4%; Pred. No. 8.3e+02;

Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 QKYCCSR 7

| :||||

Db 333 QAFCCSR 339

Search completed: November 1, 2002, 14:52:00
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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:40:53 ; Search time 1.8135 Seconds
(without alignments)
489.985 Million cell updates/sec

Title: US-09-606-129a-35
Perfect score: 49
Sequence: 1 QKYCCSRK 8

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Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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22: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Query Match	Score	Length	ID	Description
1	39	79.6	74	21	AA844795
2	39	79.6	119	21	AA844820
3	39	79.6	119	21	AA844821
4	39	79.6	124	22	AA674903
5	36	73.5	58	22	AA869460
6	36	73.5	109	17	AA84086
7	35	73.5	505	22	ABC27093
8	35	71.4	124	22	AA999956
9	35	71.4	189	20	AA934717
10	35	71.4	246	19	AAW69751
11	35	71.4	246	20	AAW94510

12	35	71.4	316	22	ABG09140	Novel human diapo
13	35	71.4	345	21	AA825483	Eucalyptus grandis
14	35	71.4	2414	16	AA844882	Transcription fact
15	35	71.4	2414	19	AAW40057	Cellular transcript
16	35	71.4	2441	16	AAW79054	CREB binding prote
17	35	71.4	2441	16	AAW40058	Cellular transcript
18	35	71.4	2441	21	AA942452	Mouse nuclear CREB
19	35	71.4	2441	22	AB844555	Mouse wound healin
20	35	71.4	2442	22	AB844556	Human wound healin
21	35	71.4	3190	22	AA844634	Amino acid sequenc
22	35	71.4	3275	22	ABB70437	Drosophila melanog
23	34	69.4	57	22	AAW86342	Human immune/haema
24	34	69.4	60	19	AAW74947	Human secreted pro
25	34	69.4	61	19	AAW74790	Human secreted pro
26	34	69.4	90	22	AB815777	Human nervous syst
27	34	69.4	100	22	AAU56930	Protonibacterium
28	34	69.4	117	19	AAW48794	Homo sapiens sprou
29	34	69.4	136	21	AA558843	Maize resistance g
30	34	69.4	139	21	AA841184	Human ORFX ORF948
31	34	69.4	140	19	AAW48793	Homo sapiens sprou
32	34	69.4	156	21	AAW87596	Human SPROUTY-1 pr
33	34	69.4	167	21	AAW87595	Human SPROUTY-1 pr
34	34	69.4	172	21	AA558851	Sorghum resistance
35	34	69.4	174	21	AA819104	Polypeptide isolat
36	34	69.4	288	21	AAW87597	Human SPROUTY-1 pr
37	34	69.4	294	21	AAW87592	Human SPROUTY-1 pr
38	34	69.4	295	21	AAW87593	Human SPROUTY-1 pr
39	34	69.4	319	21	AAW87591	Human polyptide
40	34	69.4	319	22	AAW38688	Amino acid sequenc
41	34	69.4	319	22	AAW64377	Human polyptide
42	34	69.4	326	22	AAW40474	Human SPROUTY-1 pr
43	34	69.4	338	21	AAW87594	Human SPROUTY-1 pr
44	34	69.4	423	21	AAW23211	Arabidopsis thalia
45	34	69.4	485	21	AAW23210	Arabidopsis thalia

ALIGNMENTS

RESULT 1
AAB44795
ID AAB44795 standard; Protein; 74 AA.
XX
AC AAB44795;
XX
DT 12-FEB-2001 (first entry)
XX
XX Human secreted protein sequence encoded by gene 34 SEQ ID NO:94.
DE
DE Human; secreted protein; diagnosis; immunosuppressive; antiarthritic;
KW antirheumatic; antiproliferative; cytostatic; cardiant; vasotropic;
KW cerebroprotective; nootropic; neuroprotective; antibacterial; virucide;
KW fungicide; ophthalmological; gene therapy; autoimmune disease; infection;
KW hyperproliferative disorder; cardiovascular disorder; angiogenesis;
KW cerebrovascular disorder; nervous system disorder; ocular disorder;
KW wound healing; skin aging; food additive; preservative.
XX
OS Homo sapiens.
XX
XX WO200058336-A1.
PN
PD 05-OCT-2000.
XX
XX 23-MAR-2000; 2000WO-US07726.
PF
XX 26-MAR-1999; 99US-0126597.
PR
XX 07-JAN-2000; 2000US-0174877.
XX
XX (HUMA-) HUMAN GENOME SCI INC.
PA
XX Rosen CA, Ruben SM, Komatsoulis G;
PI
XX WPI; 2000-602355/57.
DR


```
XX 23-MAR-2000; 2000WO-US07726.
XX
XX
XX 26-MAR-1999; 99US-0126597.
XX 07-JAN-2000; 2000US-0174877.
XX
XX (HUMA-) HUMAN GENOME SCI INC.
XX
XX Rosen CA, Ruben SM, Komatsoulis G;
XX WPI; 2000-602355/57.
XX
XX Nucleic acid encoding human secreted proteins, used to treat, prevent,
XX ameliorate or diagnose medical conditions such as cancer, and
XX autoimmune diseases -
XX
XX Disclosure; Page 380; 391pp; English.
XX
XX The polynucleotide sequences given in AAC79799 to AAC79848 encode the
XX human secreted proteins given in AAB44762 to AAB44811. AAB44812 to
XX AAB44829 represent human secreted polypeptide sequences and proteins
XX homologous to them, which are used in the exemplification of the present
XX invention. Human secreted proteins have activities based on the tissues
XX and cells the genes are expressed in. Examples of activities are:
XX cytostatic; cardiant; antiarthritic; antirheumatic; antiproliferative;
XX immunosuppressive; neuroprotective; vasotropic; cerebroprotective; neurotropic;
XX neuroprotective; antibacterial; virucide; fungicide; and
XX ophthalmological. The polynucleotides and polypeptides can be used to
XX prevent, treat or ameliorate a medical condition in e.g. humans, mice,
XX rabbits, goats, horses, cats, dogs, chickens or sheep. They are also used
XX in diagnosing a pathological condition or susceptibility to a
XX pathological condition. Disorders which are diagnosed or treated include
XX autoimmune diseases, hyperproliferative disorders, cardiovascular
XX disorders, cerebrovascular disorders, angiogenesis, nervous system
XX disorders, infections caused by bacteria, viruses and fungi and ocular
XX disorders. The polypeptides can also be used to aid wound healing and
XX epithelial cell proliferation, to prevent skin aging due to sunburn, to
XX maintain organs before transplantation, for supporting cell culture of
XX primary tissues, to regenerate tissues and in chemotaxis. The
XX polypeptides can also be used as a food additive or preservative to
XX increase or decrease storage capabilities. AAC79790 to AAC79798 and
XX AAB44761 represent sequences used in the exemplification of the present
XX invention.
XX
XX Sequence 119 AA;
XX
XX Query Match 79.6%; Score 39; DB 21; Length 119;
XX Best Local Similarity 75.0%; Pred. No. 56;
XX Matches 6; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
XX
XX QY 1 QKYCCSRK 8
XX Db 103 EKYCCSPK 110
XX
XX RESULT 4
XX AAG74903
XX ID AAG74903 standard; Protein; 124 AA.
XX
XX AC AAG74903;
XX
XX 03-SEP-2001 (first entry)
XX
XX Human colon cancer antigen protein SEQ ID NO:5667.
XX
XX Human; colon cancer; colon cancer antigen; diagnosis; detection;
XX colorectal carcinoma.
XX
XX Homo sapiens.
XX
XX WO200122920-A2.
XX
XX 05-APR-2001.
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XX 28-SEP-2000; 2000WO-US26524.
XX
XX 29-SEP-1999; 99US-0157137.
XX 03-NOV-1999; 99US-0163280.
XX
XX (HUMA-) HUMAN GENOME SCI INC.
XX
XX Ruben SM, Barash SC, Birse CE, Rosen CA;
XX WPI; 2001-235357/24.
XX N-PSDB; AAB34308.
XX
XX Nucleic acids encoding 4277 human colon cancer-associated polypeptides,
XX useful for preventing, diagnosing and/or treating colorectal cancers -
XX
XX Claim 11; Page 7210-7211; 9803pp; English.
XX
XX AAB32943 to AAB37195 and AAG73514 to AAG77788 represent human colon
XX cancer-associated nucleic acid molecules (N) and proteins (P), where
XX the proteins are collectively known as colon cancer antigens. The colon
XX cancer antigens have cytostatic activity and can be used in gene
XX therapy and vaccine production. N and P may be used in the prevention,
XX diagnosis and treatment of diseases associated with inappropriate P
XX expression. For example, N and P may be used to treat disorders
XX associated with decreased expression by rectifying mutations or deletions
XX in a patient's genome that affect the activity of P by expressing
XX inactive proteins or to supplement the patients own production of P.
XX Additionally, N may be used to produce the colon cancer-associated Ps,
XX by inserting the nucleic acids into a host cell and culturing the cell
XX to express the proteins. N and P can be used in the prevention, diagnosis
XX and treatment of colorectal carcinomas and cancers. AAB37196 to AAB37204
XX and AAB77789 represent sequences used in the exemplification of the
XX present invention.
XX
XX N.B. Pages 666 to 682 and page 7053 of the sequence listing were
XX missing at time of publication, meaning no sequences are present for
XX SEQ ID NO:1027 to 1052, 7921 and 7922.
XX
XX Sequence 124 AA;
XX
XX Query Match 79.6%; Score 39; DB 22; Length 124;
XX Best Local Similarity 75.0%; Pred. No. 58;
XX Matches 6; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
XX
XX QY 1 QKYCCSRK 8
XX Db 108 EKYCCSPK 115
XX
XX RESULT 5
XX ABB69460
XX ID ABB69460 standard; Protein; 58 AA.
XX
XX AC ABB69460;
XX
XX 26-MAR-2002 (first entry)
XX
XX Drosophila melanogaster polypeptide SEQ ID NO 35172.
XX
XX Drosophila; developmental biology; cell signalling; insecticide;
XX pharmaceutical.
XX
XX Drosophila melanogaster.
XX
XX WO200171042-A2.
XX
XX 27-SEP-2001.
XX
XX 23-MAR-2001; 2001WO-US09231.
XX
XX 23-MAR-2000; 2000US-191637P.
XX 11-JUL-2000; 2000US-0614150.
XX
```

PA (PEKE) PE CORP NY.
 XX Venter JC, Adams M, Li PWD, Myers EW;
 XX WPI: 2001-656860/75.
 DR N-PSDB; ABL13563.
 XX
 PT New isolated nucleic acid detection reagent for detecting 1000 or more
 PT genes from Drosophila and for elucidating cell signalling and cell-cell
 PT interactions -
 XX
 PS Disclosure; SEQ ID NO 35172; 21pp + Sequence Listing; English.
 XX
 CC The invention relates to an isolated nucleic acid detection reagent
 CC capable of detecting 1000 or more genes from Drosophila. The invention is
 CC useful in developmental biology and in elucidating cell signalling and
 CC cell-cell interactions in higher eukaryotes for the development of
 CC insecticides, therapeutics and pharmaceutical drugs. The invention
 CC discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA
 CC sequences (ABL01840-ABL16175) and the encoded proteins
 CC (ABB57737-ABB72072).
 CC The sequence data for this patent did not form part of the printed
 CC specification, but was obtained in electronic format directly from WIPO
 CC at ftp.wipo.int/pub/published_pct_sequences.
 XX
 XX Sequence 58 AA;
 SQ
 Query Match 73.5%; Score 36; DB 22; Length 58;
 Best Local Similarity 71.4%; Pred. No. 90;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 2 KYCCSRK 8
 Db 18 KYCAEK 24
 IIII: I
 RESULT 6
 AAR84086
 ID AAR84086 standard; Protein; 109 AA.
 XX
 AC AAR84086;
 XX
 DT 28-NOV-1996 (first entry)
 XX
 DE T-lymphocyte stimulatory protein.
 XX
 KW E. maxima; T-lymphocyte stimulatory protein; Eimeria; protozoan;
 KW coccidiosis; chicken; vaccine; poultry; probe.
 XX
 OS Eimeria maxima.
 XX
 PN AU9531720-A.
 XX
 PD 28-MAR-1996.
 XX
 PF 15-SEP-1995; 95AU-0031720.
 XX
 PR 16-SEP-1994; 94EP-0202676.
 XX
 PA (ALKU) AKZO NOBEL NV.
 XX
 PI Bumstead JM, Dunn PJJ, Tomley FM, Vermeulen AN;
 XX
 DR WPI: 1996-210114/22.
 DR N-PSDB; AAT14351.
 XX
 PT DNA encoding Eimeria T-lymphocyte stimulatory protein - used in
 PT vaccines to protect poultry against coccidiosis, and to develop
 PT prods. for diagnosis of Eimeria infection
 XX
 PS Claim 1; Page 46; 59pp; English.
 XX
 CC This sequence represents E. maxima T-lymphocyte stimulatory protein.

CC Eimeria protozoans are the cause of coccidiosis in chickens. The DNA
 CC encoding this sequence may be attached to a suitable promoter and used
 CC in a recombinant vector in the production of a vaccine for the protection
 CC of poultry against coccidiosis. Fragments of this sequence may also
 CC be used as probes to detect Eimeria-related nucleic acid in tissue.
 CC due to poor print quality in the specification, this sequence is a
 CC "best guess" based on the corresponding DNA sequence.
 XX
 XX Sequence 109 AA;
 SQ
 Query Match 73.5%; Score 36; DB 17; Length 109;
 Best Local Similarity 83.3%; Pred. No. 1.5e+02;
 Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 QY 2 KYCCSR 7
 Db 22 KYCCSK 27
 IIII: I
 RESULT 7
 ABG27093
 ID ABG27093 standard; Protein; 505 AA.
 XX
 AC ABG27093;
 XX
 DT 18-FEB-2002 (first entry)
 XX
 DE Novel human diagnostic protein #27084.
 XX
 KW Human; chromosome mapping; gene mapping; gene therapy; forensic;
 KW food supplement; medical imaging; diagnostic; genetic disorder.
 XX
 OS Homo sapiens.
 XX
 PN WC200175067-A2.
 XX
 PD 11-OCT-2001.
 XX
 PF 30-MAR-2001; 2001WO-US08631.
 XX
 PR 31-MAR-2000; 2000US-0540217.
 PR 23-AUG-2000; 2000US-0649167.
 XX
 PA (HYSE-) HYSEQ INC.
 XX
 PI Drmanac RT, Liu C, Tang YT;
 XX
 XX WPI: 2001-639362/73.
 DR N-PSDB; AAS91280.
 XX
 PT New isolated polynucleotide and encoded polypeptides, useful in
 PT diagnostics, forensics, gene mapping, identification of mutations
 PT responsible for genetic disorders or other traits and to assess
 PT biodiversity -
 XX
 XX Claim 20; SEQ ID No 57452; 103pp; English.
 XX
 CC The invention relates to isolated polynucleotide (I) and
 CC polypeptide (II) sequences. (I) is useful as hybridisation probes,
 CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome
 CC and gene mapping, and in recombinant production of (II). The
 CC polynucleotides are also used in diagnostics as expressed sequence tags
 CC for identifying expressed genes. (I) is useful in gene therapy techniques
 CC to restore normal activity of (II) or to treat disease states involving
 CC (II). (II) is useful for generating antibodies against it, detecting or
 CC quantitating a polypeptide in tissue, as molecular weight markers and as
 CC a food supplement. (II) and its binding partners are useful in medical
 CC imaging of sites expressing (II). (I) and (II) are useful for treating
 CC disorders involving aberrant protein expression or biological activity.
 CC The polypeptide and polynucleotide sequences have applications in
 CC diagnostics, forensics, gene mapping, identification of mutations
 CC responsible for genetic disorders or other traits to assess biodiversity
 CC and to produce other types of data and products dependent on DNA and

CC amino acid sequences. ABG00010-ABG30377 represent novel human
 CC diagnostic amino acid sequences of the invention.
 CC Note: The sequence data for this patent did not appear in the printed
 CC specification, but was obtained in electronic format directly from WIPO
 CC at ftp.wipo.int/pub/published_published_pct_sequences.

XX SQ Sequence 505 AA;

Query Match 73.5%; Score 36; DB 22; Length 505;
 Best Local Similarity 71.4%; Pred. No. 5e+02; Indels 0; Gaps 0;
 Matches 5; Conservative 2; Mismatches 0;

Qy 2 KYCCSRK 8
 |||||:
 Db 322 KYCCSQ 328

RESULT 8
 AAB99956
 ID AAB99956 standard; Protein: 124 AA.

XX AC AAB99956;

XX DT 12-OCT-2001 (first entry)

XX DE Human myelin P0 protein 14 SEQ ID NO:2.

XX KW Human; myelin P0 protein 14; cytostatic; immunomodulatory; haemostatic;
 KW anti-HIV; antiinflammatory; diagnosis; malignant neoplasm; haemopathy;
 KW HIV infection; immunological disease; inflammation.

XX OS Homo sapiens.

XX PN WO200149739-A1.

XX PD 12-JUL-2001.

XX PF 25-DEC-2000; 2000WO-CN00668.

XX PR 29-DEC-1999; 99CN-0127238.

XX PA (UYFU-) UNIV FUDAN.

XX PA (SHAN-) SHANGHAI BIO DOOR GENE TECHNOLOGY LTD.

XX PI Mao Y, Xie Y;

XX DR WPI; 2001-432873/46.

XX DR N-PSDB; AAH44460.

XX PT Myelin P0 protein 14 and encoded polynucleotide, applicable in
 PT diagnosis and treatment of malignant neoplasm, haemopathy, HIV
 PT infection, immunological diseases and various inflammation -

XX PS Claim 1; Page 29; 37pp; Chinese.

XX CC The present sequence represents human myelin P0 protein 14: (I). (I) has
 CC cytosatic, immunomodulatory, haemostatic, anti-HIV and antiinflammatory
 CC activities. (I) and the polynucleotide encoding it are applicable in
 CC the diagnosis and treatment of malignant neoplasm, haemopathy, HIV
 CC infection, immunological diseases and various inflammations.

XX SQ Sequence 124 AA;

Query Match 71.4%; Score 35; DB 22; Length 124;
 Best Local Similarity 100.0%; Pred. No. 2.3e+02;
 Matches 5; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QKYCC 5

Db 108 QKYCC 112

RESULT 9

AAV34717
 ID AAV34717 standard; Protein: 189 AA.

XX AC AAV34717;

XX DT 13-SEP-1999 (first entry)

XX DE Chlamydia pneumoniae transmembrane protein sequence.

XX KW Respiratory disease; pneumonia; bronchitis; heart disease; sarcoidosis;
 KW sinusitis; purulent otitis media; erythema nodosum; pharyngitis;
 KW vaccine; neutralising epitope.

XX OS Chlamydia pneumoniae.

XX PN WO9927105-A2.

XX PD 03-JUN-1999.

XX PF 20-NOV-1998; 98WO-IB01890.

XX PR 04-NOV-1998; 98US-0107078.

XX PR 21-NOV-1997; 97FR-0014673.

XX PA (GEST) GENSET.

XX PI Griffais R;

XX DR WPI; 1999-357842/30.

XX PT Genome sequence of Chlamydia pneumoniae

XX PS Page 714-715; Disclosure: 1912pp; English.

XX CC AAY34584-Y35879 represent the proteins encoded by all the open reading
 CC frames in the complete genome (see AAX91990) of Chlamydia pneumoniae.
 CC C. pneumoniae causes respiratory disease such as pneumonia and
 CC bronchitis and is thought to be a contributing factor in heart
 CC disease, sarcoidosis, sinusitis, purulent otitis media, erythema
 CC nodosum or pharyngitis. The polypeptides encoded by the open reading
 CC frames of the C. pneumoniae genome (see AAY34584-Y35879) can be used in
 CC immunogenic compositions as vaccines. Vectors containing C. pneumoniae
 CC nucleotides sequences can also be used as immunogenic compositions,
 CC especially where the vector directs the expression of a neutralising
 CC epitope of C. pneumoniae.

XX SQ Sequence 189 AA;

Query Match 71.4%; Score 35; DB 20; Length 189;
 Best Local Similarity 100.0%; Pred. No. 3.2e+02;
 Matches 5; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QKYCC 5

Db 17 QKYCC 21

RESULT 10
 AAW69751
 ID AAW69751 standard; Protein: 246 AA.

XX AC AAW69751;

XX DT 02-NOV-1998 (first entry)

XX DE Nicotiana tabacum osmotin protein.

XX KW Nicotiana tabacum; tobacco plant; osmotin gene; promoter; inhibition;
 KW fungal pathogen; insect pathogen; nematode pathogen; viral pathogen.
 XX OS Nicotiana tabacum.

XX FH Key Location/Qualifiers

FT Misc-difference 181
 FT /note= "encoded by GGA"
 XX US5801028-A.
 PN
 XX 01-SEP-1998.
 PD
 XX 07-JUN-1995; 95US-0482037.
 PF
 XX 12-JAN-1994; 94US-0180428.
 PR
 XX 20-MAY-1993; 93US-0065147.
 PR
 XX 07-JUN-1995; 95US-0482037.
 PR
 XX (PURD) PURDUE RES FOUND.
 PA
 XX Bressan R, Hasegawa PM;
 XX WPI; 1998-494773/42.
 PI
 XX N-PSDB; AAV52754.
 DR
 XX
 XX Inhibition of pathogens in plants by recombinant expression of
 PT pathogen inhibiting proteins - uses nucleic acid constructs
 PT containing the pathogen inhibiting proteins under control of osmotin
 PT promoter, which is inducible by specific signals
 XX
 XX Claim 1; Column 29-34; 26pp; English.
 PS
 XX A method has been developed of inhibiting a pathogen in a plant. The
 CC method comprises: (a) providing or constructing a vector comprising an
 CC osmotin promoter and foreign DNA sequence encoding a pathogen-inhibiting
 CC protein, where the promoter is operably linked to the foreign DNA
 CC sequence and includes: (i) nucleotide sequence 5' of the osmotin coding
 CC sequence extending to position -248 bases from the start of the osmotin
 CC protein coding sequence, the coding sequence defined as starting at bp
 CC 2034 of the 3033 bp osmotin sequence (see AAV52754), (ii) a nucleotide
 CC sequence which hybridises to (i) and promotes expression of an operably
 CC linked coding sequence under conditions of desiccation; and (b)
 CC introducing the vector into the plant to create a transformed plant,
 CC where expression of the pathogen-inhibiting protein in the transformed
 CC plant is regulated by the osmotin promoter. The method is useful for the
 CC production of recombinant plants having genes under control of an
 CC osmotin promoter, especially of pathogen inhibiting proteins. Osmotins
 CC are cationic plant proteins, similar to tobacco PR-5-type proteins. The
 CC osmotin genes are under control of hormonal or environmental signals,
 CC including abscisic acid, ethylene, tobacco mosaic virus invention,
 CC salinity, desiccation and wounding. The present sequence represents the
 CC Nicotiana tabacum osmotin protein.
 XX
 XX Sequence 246 AA;
 SQ
 Query Match 71.4%; Score 35; DB 19; Length 246;
 Best Local Similarity 50.0%; Pred. No. 4e+02;
 Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QKYCCSRK 8
 Db 174 QQYCCTQR 181
 I:||||:
 RESULT 11
 ID AAW94510
 AC AAW94510 standard; Protein; 246 AA.
 XX
 XX AAW94510;
 AC
 XX 26-APR-1999 (first entry)
 DT
 XX Tobacco osmotin protein.
 DE
 XX Nicotiana tabacum; tobacco; osmotin; promoter.
 KW
 XX Nicotiana tabacum.
 OS
 XX

PN US5874626-A.
 XX 23-FEB-1999.
 PD
 XX 12-JAN-1994; 94US-0180428.
 PF
 XX 12-JAN-1994; 94US-0180428.
 PR
 XX 20-MAY-1993; 93US-0065147.
 PR
 XX (PURD) PURDUE RES FOUND.
 PA
 XX Bressan R, Hasegawa PM;
 XX WPI; 1999-180080/15.
 PI
 XX N-PSDB; AAX16340.
 DR
 XX Tobacco osmotin gene promoter - and recombinant construct comprising
 PT foreign gene under its control
 PT
 XX Disclosure; Fig 9A; 26pp; English.
 PS
 XX The present sequence represents the Nicotiana tabacum (tobacco) osmotin
 CC protein. The present invention specifically claims a DNA fragment
 CC comprising the osmotin gene promoter sequence with no more than 100 bp
 CC of the coding sequence. Also described are methods which are useful in
 CC processes for achieving expression of a coding sequence from a foreign
 CC gene in a host cell.
 CC
 XX Sequence 246 AA;
 SQ
 Query Match 71.4%; Score 35; DB 20; Length 246;
 Best Local Similarity 50.0%; Pred. No. 4e+02;
 Matches 4; Conservative 4; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QKYCCSRK 8
 Db 174 QQYCCTQR 181
 I:||||:
 RESULT 12
 ID AAG09140
 AC AAG09140 standard; Protein; 316 AA.
 XX
 XX AAG09140;
 AC
 XX 13-FEB-2002 (first entry)
 DT
 XX Novel human diagnostic protein #9131.
 DE
 XX Human; chromosome mapping; gene mapping; gene therapy; forensic;
 KW food supplement; medical imaging; diagnostic; genetic disorder.
 KW
 XX Homo sapiens.
 OS
 XX WO200175067-A2.
 PN
 XX 11-OCT-2001.
 PD
 XX 30-MAR-2001; 2001WO-US08631.
 PF
 XX 31-MAR-2000; 2000US-0540217.
 PR
 XX 23-AUG-2000; 2000US-0649167.
 PR
 XX (HYSE-) HYSEQ INC.
 PA
 XX Drmanac RT, Liu C, Tang YT;
 PI
 XX WPI; 2001-639362/73.
 DR
 XX N-PSDB; AAS73327.
 DR
 XX New isolated polynucleotide and encoded polypeptides, useful in
 PT diagnostics, forensics, gene mapping, identification of mutations
 PT responsible for genetic disorders or other traits and to assess

PT biodiversity -
 XX
 PS Claim 20; SEQ ID NO 39499; 103pp; English.
 XX
 CC The invention relates to isolated polynucleotide (I) and
 CC polypeptide (II) sequences. (I) is useful as hybridisation probes,
 CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome
 CC and gene mapping, and in recombinant production of (II). The
 CC polynucleotides are also used in diagnostics as expressed sequence tags
 CC for identifying expressed genes. (I) is useful in gene therapy techniques
 CC to restore normal activity of (II) or to treat disease states involving
 CC (II). (II) is useful for generating antibodies against it, detecting or
 CC quantitating a polypeptide in tissue, as molecular weight markers and as
 CC a food supplement. (II) and its binding partners are useful in medical
 CC imaging of sites expressing (II). (I) and (II) are useful for treating
 CC disorders involving aberrant protein expression or biological activity.
 CC The polypeptide and polynucleotide sequences have applications in
 CC diagnostics, forensics, gene mapping, identification of mutations
 CC responsible for genetic disorders or other traits to assess biodiversity
 CC and to produce other types of data and products dependent on DNA and
 CC amino acid sequences. ABG00010-ABG30377 represent novel human
 CC diagnostic amino acid sequences of the invention.
 CC Note: The sequence data for this patent did not appear in the printed
 CC specification, but was obtained in electronic format directly from WIPO
 CC at ftp.wipo.int/pub/published_pct_sequences.
 XX
 SQ Sequence 316 AA;

Query Match 71.4%; Score 35; DB 22; Length 316;
 Best Local Similarity 83.3%; Pred. No. 4.8e+02;
 Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 3 YCCSRK 8
 :|||||
 Db 276 FCCSRK 281

RESULT 13
 AAB25483
 ID AAB25483 standard; Protein; 345 AA.

XX AAB25483;

XX 27-NOV-2000 (first entry)

DE Eucalyptus grandis cell signalling involved protein SEQ ID NO:802.

XX Eucalyptus grandis; Pinus radiata; Monterey pine; plant; modification;
 KW plant cell signalling; modulation; transgenic plant; pathogen; growth;
 KW environmental change; development; cell proliferation; differentiation;
 KW elongation; survival; disease resistance; nutrient metabolism.

XX Eucalyptus grandis.

XX WO200042171-A1.

XX 20-JUL-2000.

XX 11-JAN-2000; 2000WO-US00724.

XX 12-JAN-1999; 99US-0228986.

XX 01-NOV-1999; 99US-0162866.

XX (GENE-) GENESIS RES & DEV CORP LTD.

XX Strabala TJ, Nieuwenhuizen NJ;

XX WPI; 2000-476052/41.

XX Isolated polynucleotide encoding a polypeptide involved in cell
 PT signaling used for generating transgenic plants with modified responses
 PT to external signals -
 XX

PS Claim 3; Page 371-372; 527pp; English.
 XX
 CC AAA79263 to AAA79736 and AAB25100 to AAB25570 represent polynucleotide
 CC and protein sequences isolated from eucalyptus (Eucalyptus grandis) or
 CC pine (Pinus radiata also known as Monterey pine). The protein sequences
 CC are involved in cell signalling. The polynucleotide and protein
 CC sequences can be used to modify the response of plant cells to external
 CC signals e.g. environmental changes or pathogens during the growth and
 CC development of a plant. They can be used to modify cell proliferation,
 CC differentiation, elongation and survival, resistance to disease and
 CC nutrient metabolism. Examples of modifications which can be produced are
 CC altered fruit ripening and senescence of leaves and flowers e.g. to
 CC delay senescence and prolong the life of cut flowers or enhance
 CC senescence of reproductive organs to engineer sterile plants. Other
 CC modifications can be used to delay senescence in selected cell types or
 CC organs providing fruit and vegetables which have a longer shelf life
 CC between harvest and consumption, or to decrease branching frequency in
 CC forest tree species giving long stretches of valuable knot-free clear
 CC wood which can be used in solid timber furniture and veneers.
 XX
 SQ Sequence 345 AA;

Query Match 71.4%; Score 35; DB 21; Length 345;
 Best Local Similarity 83.3%; Pred. No. 5.2e+02;
 Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 3 YCCSRK 8
 :|||||
 Db 306 YCCSRK 311

RESULT 14

AAR84882

ID AAR84882 standard; Protein; 2414 AA.

XX AAR84882;

XX 01-FEB-1996 (first entry)

DE Transcription factor p300.

XX Transcription factor; p300; adenovirus; early region 1A; EIA;

XX cancer; diagnosis.

XX Homo sapiens.

XX Key Location/Qualifiers

FT Peptide 11..17

FT /label= Nuclear_location_signal

FT Region 342..421

FT /label= C/H-rich_region_1

FT /note= "cysteine/histidine-rich region containing
 2 putative zinc finger motifs"

FT Domain 1070..1134

FT /label= Bromodomain

FT Region 1162..1461

FT /label= C/H-rich_region_2

FT Region 1622..1821

FT /label= C/H-rich_region_3

XX WO9528499-A1.

XX 26-OCT-1995.

XX 13-APR-1995; 95WO-US04682.

XX 14-APR-1994; 94US-0227536.

XX (DAND) DANA FARBER CANCER INST INC.

XX Eckner R, Ewen M, Livingston D;

XX WPI; 1995-373813/48.

DR

DR N-PSDB; AAT02792.
XX Nucleic acid encoding human p300 that associates with adenovirus ELA.
PT - and related vectors, host cells and screening assays, also
PT diagnosis of cancerous and pre-cancerous tissue by detection of
PT mutant p300
XX
XX Disclosure; Page 61-78; 126pp; English.
XX
XX Transcription factor p300 was isolated from human 293 cells and used
CC to generate polyclonal antisera in mice. These were used to screen
CC 293 cDNA libraries to isolate clones contg. overlapping inserts,
CC which were assembled to obtain a full-length cDNA sequence (AAT02792)
CC encoding a protein (AAR84882) of predicted mol.wt. 264.236 kDa.
CC p300 may be produced in host cells (pref. mammalian) and used to
CC raise monoclonal antibodies or to screen cpds. for the ability to
CC modulate p300-dependent transcription.
XX
SQ Sequence 2414 AA;
Query Match 71.4%; Score 35; DB 16; Length 2414;
Best Local Similarity 83.3%; Pred. No. 2.4e+03;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 3 YCCSRK 8
||| ||
Db 1162 YCCGRK 1167
RESULT 15
AAT40057
ID AAW40057 standard; Protein; 2414 AA.
XX
XX AC AAW40057;
XX
DT 20-JUL-1998 (first entry)
XX
DE Cellular transcriptional factor p300.
XX
KW Cellular transcriptional factor; p300; human; P300; P/CAF;
KW transcription; histone acetyltransferase; HIV; Infection; cancer;
KW therapy; muscle differentiation.
XX
XX Homo sapiens.
XX
XX Key Location/Qualifiers
FH 1763..1966
FT Region /note= "P/CAF binding region"
FT
XX WO9803652-A2.
XX
XX 29-JAN-1998.
XX
XX 23-JUL-1997; 97WO-US12877.
XX
XX 23-JUL-1996; 96US-0022273.
XX
XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Howard BH, Nakatani Y;
XX
XX WPI; 1998-120777/11.
DR N-PSDB; AAV10092.
XX
XX New isolated p300/CBP-associated factor, P/CAF - used to develop
PT products for modulating transcription, e.g. for treating HIV
PT infection or cancers or for promoting muscle differentiation
XX
XX Disclosure; Page 76-81; 107pp; English.
XX
XX This polypeptide sequence comprises p300, a global transcriptional
CC coactivator that is involved in the regulation of various
CC DNA-binding transcriptional factors. The invention relates to a

CC novel human p300/CBP associated cofactor, P/CAF (see AAW40052), that
CC modulates transcription through binding to p300 and CBP (see
CC AAW40058). The region (see AAW40055) of p300 that binds to P/CAF
CC is claimed. The invention provides methods of screening for
CC compounds that inhibit or stimulate the transcription modulating
CC and histone acetyltransferase activity of P/CAF and p300/CBP.
CC Inhibitors can be used e.g. to inhibit HIV TAT-mediated
CC transcription in the treatment of HIV infection. Stimulators can
CC be used e.g. to activate the muscle differentiation factor MyoD to
CC cancer or to activate the muscle differentiation factor MyoD to
CC promote muscle differentiation. The products can also be used to
CC inhibit the cell cycle progression inducing effect of an
CC oncoprotein which binds p300/CBP in a subject. Also provided is
CC a method for determining the amount of P/CAF in a sample by
CC contacting the sample with the P/CAF binding region of p300 and
CC determining the amount of P/CAF/p300 complex formed.
XX

SQ Sequence 2414 AA;

Query Match 71.4%; Score 35; DB 19; Length 2414;
Best Local Similarity 83.3%; Pred. No. 2.4e+03;
Matches 5; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 3 YCCSRK 8
||| ||
Db 1162 YCCGRK 1167

Search completed: November 1, 2002, 14:47:10
Job time : 2.8135 secs


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Qy 241 VPNVGNKNIFLKQDNIFVQKLLGFSEKELAAEKKRILHCLGLAEETQKYCCSRK 296
|||||
Db 241 VPNVGNKNIFLKQDNIFVQKLLGFSEKELAAEKKRILHCLGLAEETQKYCCSRK 296

RESULT 2
Q9BRW8 PRELIMINARY; PRT; 296 AA.
AC Q9BRW8:
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE SIMILAR TO BLIVERDIN REDUCTASE A.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
SEQUENCE FROM N.A.
RC TISSUE=BRAIN, PRIMITIVE NEUROECTODERMAL;
RA Strausberg R.;
RL Submitted (apr-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; BC005902; AA05902.1; -.
DR InterPro; IPR000683; GFO_IDH_MocA.
DR Pfam; PF01408; GFO_IDH_MocA; 1.
SQ SEQUENCE 296 AA; 33432 MW; A389AFDDB6ADB6F CRC64;

Query Match 98.48; Score 1484; DB 4; Length 296;
Best Local Similarity 98.3%; Pred. No. 3.9e-115;
Matches 291; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 MNAEPERKFGVVVGVGRAGSVRMDLRNPHPSAFLNLIGFVSRRELGSIDGVQOISLE 60
|||
Db 1 MNTPEKFGVVVGVGRAGSVRMDLRNPHPSAFLNLIGFVSRRELGSIDGVQOISLE 60

Qy 61 DALSSQEVAVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120
|||||
Db 61 DALSSQEVAVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120

Qy 121 LHEEHVELLMEEFAFLKKEVVGKDLLGSLFTSDPLEEDRFGPPAFSGISRLTWLSLF 180
|||||
Db 121 SHEEHVELLMEEFAFLKKEVVGKDLLGSLFTAGPLEEERFGPPAFSGISRLTWLSLF 180

Qy 181 GELSLSATLEERKEDQYMKTVCLTEKKSPLSWIEKPGPKRNRYLSFHFKSGSLEN 240
|||||
Db 181 GELSLSATLEERKEDQYMKTVCLTEKKSPLSWIEKPGPKRNRYLSFHFKSGSLEN 240

Qy 241 VPNVGNKNIFLKQDNIFVQKLLGFSEKELAAEKKRILHCLGLAEETQKYCCSRK 296
|||||
Db 241 VPNVGNKNIFLKQDNIFVQKLLGFSEKELAAEKKRILHCLGLAEETQKYCCSRK 296

RESULT 3
Q9CY64 PRELIMINARY; PRT; 295 AA.
AC Q9CY64:
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE 2500001N03RIK PROTEIN.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=EMBRYONIC LIVER;
RX MEDLINE=21085660; PubMed=11217851;
RA Kawai J., Shingawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Kadoya T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaide I., Pesole G., Quackenbush J.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,

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RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaide I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Momota N.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto K.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whitaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawai H., Kohtsuki S.,
RA Hayashizaki Y.;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL; AK010847; BAB27219.1; -.
DR MGD; MGI:1917355; 2500001N03RIK.
DR InterPro; IPR000683; GFO_IDH_MocA.
DR Pfam; PF01408; GFO_IDH_MocA; 1.
SQ SEQUENCE 295 AA; 33524 MW; F2E1682BD77032A4 CRC64;

Query Match 83.1%; Score 1253.5; DB 11; Length 295;
Best Local Similarity 82.9%; Pred. No. 5.1e-96;
Matches 242; Conservative 28; Mismatches 21; Indels 1; Gaps 1;

Qy 1 MNAEPERKFGVVVGVGRAGSVRMDLRNPHPSAFLNLIGFVSRRELGSIDGVQOISLE 60
|||
Db 1 MSTEPEKFGVVVGVGRAGSVRMDLRNPHPSAFLNLIGFVSRRELGSIDGVQOISLE 59

Qy 61 DALSSQEVAVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120
|||||
Db 60 DALSSQEVAVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 119

Qy 121 LHEEHVELLMEEFAFLKKEVVGKDLLGSLFTSDPLEEDRFGPPAFSGISRLTWLSLF 180
|||||
Db 120 LHEEHVELLMEEFAFLKKEVVGKDLLGSLFTASPLEEERFGPPAFSGISRLTWLSLF 179

Qy 181 GELSLSATLEERKEDQYMKTVCLTEKKSPLSWIEKPGPKRNRYLSFHFKSGSLEN 240
|||||
Db 180 GELSLSATLEERKEDQYMKTVCLTEKKSPLSWIEKPGPKRNRYLSFHFKSGSLEN 239

Qy 241 VPNVGNKNIFLKQDNIFVQKLLGFSEKELAAEKKRILHCLGLAEETQKYC 292
|||||
Db 240 VPNVGNKNIFLKQDNIFVQKLLGFSEKELAAEKKRILHCLGLAEETQKYC 291

RESULT 4
Q9DD21 PRELIMINARY; PRT; 303 AA.
AC Q9DD21:
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE 0610006A11RIK PROTEIN.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=KIDNEY;
RX MEDLINE=21085660; PubMed=11217851;
RA Kawai J., Shingawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaide I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,

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RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohatsu S.,
RA Havaashizaki Y.,
RT "Functional annotation of a full-length mouse cDNA collection."
RL Nature 409:685-690(2001).
DR EMBL: AK002231; BAB21950.1; -.
DR MGD: MGI:1915580; 0610006A11Rik.
DR InterPro: IPR000683; GFO_IDH_Moca.
DR Pfam: PF01408; GFO_IDH_Moca; 1.
SQ SEQUENCE 303 AA; 34491 MW; 52D8A3B02EE956EB CRC64;

Query Match 83.1%; Score 1253.5; DB 11; Length 303;
Best Local Similarity 82.9%; Pred. No. 5.3e-96;
Matches 242; Conservative 28; Mismatches 21; Indels 1; Gaps 1;
QY 1 MNAEPKRGVGVVGVGRAGSVNRDLRNPSSAFNLIGFVSRRELGSIDGVOQISLE 60
DB 1 MSTEPRKRGVGVVGVGRAGSVNRDLRNPSSAFNLIGFVSRRELGSIDGVOQISLE 59
QY 61 DALSSQEVAVYICSESSSHEDYIRQFLNAGKHVLEVPMTLSLAAQELWELAEOKGV 120
DB 60 DALRSQEVAVYICSESSSHEDYIRQFLNAGKHVLEVPMTLSLAAQELWELAEOKGV 119
QY 121 LHEHVEHVELLMEEFAFLKKEVVGKDLLKGSLLFTSDPLEEDRFGEPAFGISRLTWLSLF 180
DB 120 LHEHVEHVELLMEEFAFLKKEVVGKDLLKGSLLFTSDPLEEDRFGEPAFGISRLTWLSLF 179
QY 181 GELSLSVATLEERKEDQYMKMTVCLETEKKSPLSNIEKPGKLRNRYLSHFHSGSLEN 240
DB 180 GELSLSVATLEERKEDQYMKMTVCLETEKKSPLSNIEKPGKLRNRYLSHFHSGSLEN 239
QY 241 VPNVGVNKNIFLKDNITFVKLLQGFSEKELAAEKRLHLCGLAEETQKVC 292
DB 240 VPNVGVNKNIFLKDNITFVKLLQGFSEKELAAEKRLHLCGLAEETQKVC 291

RESULT 5
O95019 PRELIMINARY; PRT; 92 AA.
AC O95019;
DT 01-MAY-1999 (TrEMBLrel. 10, Created)
DT 01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE BILIVERDIN-IX ALPHA REDUCTASE (FRAGMENT).
GN BLVRA.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA Cordes M., Wohlman P., Morris M.,
RT "The sequence of Homo sapiens PAC clone RP5-974M14."
RL Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RA Waterston R.,
RL Submitted (DEC-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AC004939; AAD05025.1; -.
FT NON_TER 1
FT NON_TER 92
SQ SEQUENCE 92 AA; 10552 MW; 390331108449BD93 CRC64;

Query Match 29.8%; Score 450; DB 4; Length 92;
Best Local Similarity 96.7%; Pred. No. 4.5e-30;
Matches 89; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

QY 119 KVLHEHVEHVELLMEEFAFLKKEVVGKDLLKGSLLFTSDPLEEDRFGEPAFGISRLTWLS 178
DB 1 KVLHEHVEHVELLMEEFAFLKKEVVGKDLLKGSLLFTAGTAALEERFGFPAPFSGISRLTWLS 60
QY 179 LFGELSLSVATLEERKEDQYMKMTVCLETEKK 210
DB 61 LFGELSLSVATLEERKEDQYMKMTVCLETEKK 92

RESULT 6
P72782 PRELIMINARY; PRT; 328 AA.
AC P72782;
DT 01-FEB-1997 (TrEMBLrel. 02, Created)
DT 01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE BILIVERDIN REDUCTASE.
GN SLR1784.
OS Synechocystis sp. (strain PCC 6803).
OC Bacteria; Cyanobacteria; Chroococcales; Synechocystis.
OX NCBI_TaxID=1148;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=97061201; PubMed=8905231;
RA Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,
RA Miyajima N., Hirosewa M., Sugiyama M., Sasamoto S., Kimura T.,
RA Hosouchi T., Matsuoka A., Muraki A., Nakazaki N., Naruo K., Okumura S.,
RA Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.,
RA Tabata S.,
RT "Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. II. Sequence determination of the entire genome and assignment of potential protein-coding regions.".
RL DNA Res. 3:109-136(1996).
DR EMBL: D90900; BAA16797.1; -.
DR InterPro: IPR000683; GFO_IDH_Moca.
DR InterPro: IPR004104; GFO_IDH_Moca_C.
DR Pfam: PF01408; GFO_IDH_Moca; 1.
DR Pfam: PF02894; GFO_IDH_Moca_C; 1.
KW Complete proteome.
SQ SEQUENCE 328 AA; 36640 MW; 51474ABD26B2C7EF CRC64;

Query Match 14.5%; Score 218.5; DB 16; Length 328;
Best Local Similarity 25.2%; Pred. No. 4.2e-10;
Matches 82; Conservative 57; Mismatches 141; Indels 45; Gaps 12;
QY 3 AEPERKFGVGVVGVGRAGSVNRDLRNPSSAFNLIGFVSRRELGSID-----GVO-Q 56
DB 8 ATPVR---VGIVGTGYAAQRAAEVFRGDRS----QLVSFWGNSANTAKFADTFGVRPQ 60
QY 57 ISLEDAISSQEVAVYICSESSSHEDYIRQFLNAGKHVLEVPMTLSLAAQELWELAEQ 116
DB 61 OSWALINDPEIDLVIATINQLHGAIAEALQAGKHVVLEYPALTAYAMGKKLOQLARE 120
QY 117 KGKVLHEHVEHVELLMEEFAFLKKEV---VGKDL-LKGSLLFTSDPLEE-----DRFGFPAP 167
DB 121 KGKLLHVEHIELLGGVHQAIRQLNKGICEVFYARSTIMGQNPAPQRTYHHQGFGLPV 180
QY 168 SGISRLTWLSLFGELSLSVATLE---ERKEDQYMK---MTVCLETEKKSPLSNIEKPG 222
DB 181 AALSRSRFTDLFGTVQVQVDAQCRFDQNPPEYFRACLATAYLQFNNGLKAEVYKGEV 240
QY 223 LKRN-RYLSHFHSGSL-----ENVPNVGVNKNIFLKDNITFVKLLQGF 267
DB 241 PHONERIFTLHGRGTLIFVGTGRLIOGQTETETITVGSRRGLFRQDTEAVLDYLT---T 297
QY 268 EKELAAEKRLHLCGLAEETQKVC 292
DB 298 GKPLYVDLEASLYALEVADLCAQAC 322

RESULT 7
Q97UH0

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ID Q97UHO PRELIMINARY; PRT; 371 AA.
AC Q97UHO;
DT 01-OCT-2001 (TrEMBLrel. 18, Created)
DT 01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE DEHYDROGENASE, PUTATIVE.
GN SSO3049.
OS Sulfolobus solfataricus.
OC Archaea; Crenarchaeota; Sulfolobales; Sulfolobaceae; Sulfolobus.
OX NCBI_TaxID=2287;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=ATCC 35092 / DSM 1617 / P2;
RX MEDLINE=21332296; PubMed=11427726;
RA She O., Singh R.K., Confalonieri F., Zivanovic Y., Allard G.,
RA Aways M.J., Chan-Weiher C.C.-Y., Clausen I.G., Curtis B.A.,
RA De Moors A., Erauso G., Fletcher C., Gordon P.M.K.,
RA Heikamp-de Jong I., Jeffries A.C., Kozera C.J., Medina N., Peng X.,
RA Thi-Ngoc H.P., Redder P., Schenk M.E., Theriault C., Tolstrup N.,
RA Charlebois R.L., Doolittle W.F., Duquet M., Gaasterland T.,
RA Garrett R.A., Ragan M.A., Senses C.W., Van der Oost J.;
RT "The complete genome of the crenarchaeon Sulfolobus solfataricus P2.";
RL Proc. Natl. Acad. Sci. U.S.A. 98:7835-7840(2001).
DR EMBL; AE006896; AAK43149.1; -.
DR InterPro; IPR000683; GFO_IDH_MOCA.
DR Pfam; PF01408; GFO_IDH_MOCA; 1.
DR Pfam; PF02894; GFO_IDH_MOCA_C; 1.
KW Complete proteome.
SQ SEQUENCE 371 AA; 41760 MW; DAAEL6466D53306B CRC64;

Query Match 10.3%; Score 155.5; DB 17; Length 371;
Best Local Similarity 20.6%; Pred. No. 8.3e-05;
Matches 66; Conservative 60; Mismatches 115; Indels 79; Gaps 12;

QY 7 RKFGVVVGVGRAGSVRMRLNPHPSAFNLNIGFVSRL-----RELGSIDGV-QQISLE 60
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 18 KRIGAVVVLGSIGKTHVKALKDLEKETEFVKLVAVVDQIKAEKIGSEYGTGYTTID 77
QY 61 DALSSQVEVAYICSSSESHEDYIRQFLNAGKHVLPVMTLSLAAAEQELWELAEQK--- 117
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 78 EVLRNSEVDVISTATPSYLHAPQAILAEYKGVHIVEKPMATLTIAGAREMVSRAERNEVK 137

QY 118 -GKVLHEHVELLMEEFAFLKKEVVGKDL-----LKGSLLTSDPL----- 157
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 138 LGVIFQERYA----PDIRRLKNDIL-RELGRYLIASELKWYRDMKG--YYKRDEIARSW 190

QY 158 ----BEDRFGEPAFGSRILTWLVSFLGELSLVSATLEERKEDQYMKWVCLTEKKSPL 213
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 191 RGMWNTGGGVMTNQGIHTIDMLWLNGEVEEVSFGVDNLTHDG-----IE----- 236

QY 214 SWTEKGPGLKRNRYLSFHFKSGSLEVPNV-----GVKNKIFLKDQNI 257
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 237 --VEDTAVAIWR-----YKNGALGTISQTVSMKPTTYQYRKIRVNGSNGFVEITDGLS 287

QY 258 FVQKLLGFSEKELAEKKR 277
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 288 STVAIEGKIEKSSVEYKK 307

RESULT 8
ID Q986T3 PRELIMINARY; PRT; 382 AA.
AC Q986T3;
DT 01-OCT-2001 (TrEMBLrel. 18, Created)
DT 01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
DE DEHYDROGENASE.
GN MLL7219.
OS Rhizobium loti (Mesorhizobium loti).
OC Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
OC Phyllobacteriaceae; Mesorhizobium.
OX NCBI_TaxID=381;
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RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=MAFF303099;
RX MEDLINE=21082930; PubMed=11214968;
RA Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Sasamoto S.,
RA Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,
RA Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A.,
RA Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M.,
RA Takeuchi C., Yamada M., Tabata S.;
RT "Complete genome structure of the nitrogen-fixing symbiotic bacterium Mesorhizobium loti.";
RL DNA Res. 7:331-338(2000).
DR EMBL; AP003011; BAB53370.1; -.
DR InterPro; IPR000683; GFO_IDH_MOCA.
DR Pfam; PF01408; GFO_IDH_MOCA; 1.
KW Complete proteome.
SQ SEQUENCE 382 AA; 40593 MW; 785DA27E3D3308C5 CRC64;

Query Match 9.4%; Score 142.5; DB 16; Length 382;
Best Local Similarity 24.1%; Pred. No. 0.001;
Matches 64; Conservative 39; Mismatches 104; Indels 59; Gaps 9;

QY 1 MNAPERKFGVVVGVGRAGSVRMRLNPHPSAFNLNIGFVSRLRGSLD----- 52
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 1 MQAKSEAKLAIGVIG---CGNISMTYLRN-----AALFGGIELRACADISADMAALRA 50

QY 53 --GVQOISLEDALSSQVEVAYICSSSESHEDYIRQFLNAGKHVLPVMTLSLAAAEQ 109
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 51 KEYGIQALGVDAALLSDPEIDLVNLTPAAHFDLSLSAGKHVFTKEKPLATSGDGR 110

QY 110 LWELAEQKGVLRH-----EHVELLMEEFAFLKKEVVGKDLKGLSLTSDPLEE 159
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 111 LVAEAAKRGVLLGSAPDTFLGAAGRRARRRLMDEGA-IGRPVGTGTFPMGMGRMEHHPNQ 169

QY 160 DRP---GFPAFS-GISRLTWLVSFLGELSLVSATLEERKEDQYMKWVCLTEKKSPLSW 215
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 170 FYTQPGGVPDMGPPYLTMLVNLGSPVARVMAMATRGQERL----- 212

QY 216 IEKGPGLKRNRYLSFHFKSGSLENV 241
D : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 213 ITAEGP-----FKNTFTKVGTPTNV 232

RESULT 9
ID Q26961 PRELIMINARY; PRT; 318 AA.
AC Q26961;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE 3-CHLOROBENZOATE-3,4-DIOXYGENASE DYHYDROGENASE RELATED PROTEIN.
GN MTH875.
OS Methanothermobacter thermoautotrophicus.
OC Archaea; Euryarchaeota; Methanobacteriales; Methanobacteriaceae;
OC Methanothermobacter.
OX NCBI_TaxID=145262;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=DELTA H;
RX MEDLINE=98037514; PubMed=9371463;
RA Smith D.R., Doucette-Stamm L.A., DeLoughery C., Lee H.-M., DuBois J.,
RA Harridge T., Bashirzadeh R., Blakely D., Cook R., Gilbert K.,
RA Harrison D., Hoang L., Keagle P., Lumm W., Pothier B., Qiu D.,
RA Spadafora R., Vicare R., Wang Y., Wierzbowski J., Gibson R.,
RA Jiواني N., Caruso A., Bush D., Safer H., Patwell D., Prabhakar S.,
RA Mcbougall S., Shimer G., Goyal A., Pietrowski S., Church G.M.,
RA Daniels C.J., Mao J.-I., Rice P.-I., Nolling J., Reeve J.N.;
RT "Complete genome sequence of Methanobacterium thermoautotrophicum deltaH: functional analysis and comparative genomics.";
RL J. Bacteriol. 179:7135-7155(1997).
DR EMBL; AE000863; AAB85373.1; -.
DR InterPro; IPR000683; GFO_IDH_MOCA.
DR InterPro; IPR004104; GFO_IDH_MOCA_C.
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RA Paro V., Pohl T.M., Portetelle D., Porvollik S., Prescott A.M.,
RA Presman E., Pujic P., Purnelle B., Rapoport G., Rey M., Reynolds S.,
RA Rieger M., Rivolta C., Roche E., Roche B., Rose M., Sadale Y.,
RA Sato T., Scanlan E., Schleich S., Schroeter R., Scoffone F.,
RA Sekiguchi J., Sekowska A., Seror S.J., Seror P., Shin B.S., Solido B.
RA Sorokin A., Tacconi E., Takagi T., Takahashi H., Takemaru K.,
RA Takeuchi M., Tanakoshi A., Tanaka T., Terpstra P., Tognoni A.,
RA Tosato V., Uchiyama S., Vandendool M., Vannier F., Vassarotti A.,
RA Viari A., Wambutt R., Wedler E., Wedler H., Weitzenecker T.,
RA Winters P., Wipat A., Yamamoto H., Yamane K., Yasumoto K., Yata K.,
RA Yoshida K., Yoshikawa H.F., Zumbstein E., Yoshikawa H., Danchin A.,
RT "the complete genome sequence of the gram-positive bacterium Bacillus
RT subtilis."
RL Nature 390:249-256(1997).
RL [3]
RN SEQUENCE FROM N.A.
RP STRAIN=168;
RC
RL Kunst F., Ogasawara N., Yoshikawa H., Danchin A.;
RA Submitted (NOV-1997) to the EMBL/GenBank/DDBJ databases.
DL EMBL: D78508; BAAL1399.1; -.
DR EMBL: Z99108; CAB12657.1; -.
DR InterPro: IPR000683; GFO_IDH_MOCA.
DR InterPro: IPR004104; GFO_IDH_MOCA_C.
DR Pfam: PF01408; GFO_IDH_MOCA_1.
DR Pfam: PF02894; GFO_IDH_MOCA_C; 1.
KW Complete proteome.
SQ SEQUENCE 393 AA; 43584 MW; 3EEE326E1A047602 CRC64;

Query Match          9.2%; Score 139; DB 16; Length 393;
Best Local Similarity 23.3%; Pred.No.0.0021;
Matches 63; Conservative 51; Mismatches 91; Indels 72; Gaps

Qy 13 VVGVRAGSV-----RMRLRNPPISSAF-LNLIGFVSRRRLSGIDGV----- 54
   :||| :| | :| | :| | :| | :| | :| | :| | :| | :| | :| |
Db 17 MVGGRLSQVKYKHKRALRD---NTAFQLTAGAFDIDAERGKDGFVNLGVDAERCYPNY 73

Qy 55 QQISLEDALDSQEVEVAYICSESSHEDYTRQFLNACKGHVLVEYPTWTLSLAAQAELWELA 114
   :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :|
Db 74 QTMFAEEAKRGDIGEVVSIATPNGTHYEICKAALEAGVHVHCEKPFFTSAEQOETKALA 133

Qy 115 EOKKVLHEEH-----VELLMEEFAFLKKEVGVKKLLGSLFTSDPLEEDRFGEF 164
   :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :|
Db 134 EKKGIVGVTVYFGSGNQMLQMAMIQGMIG-DIRVVDLOYT-----HGFCATDEG 184

Qy 165 -----PAFSGISRLTWLVSLFGELSVSATLEERKEDDYMKMTVCLETETKKSP 212
   :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :|
Db 185 EKISAQKWRVPDAIGPS-----FVLGDLS-----THTYYNSQLIMPKMIKEL 239

Qy 213 L-----SWIEKGPGLKNRYLSFHFKSGSLENVPNGVN 247
   :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :| :|
Db 230 LCDRQSFGVRAP-LEDNAHVLHMHYENGAVGTMMWTSSIN 267

RESULT 11
ID Q9WZ54 PRELIMINARY; PRY 360 AA.
AC Q9WZ54;
RW MEDLINE=99287316; PubMed=10360571;
DT 01-NOV-1999 (TrEMBLrel. 12, Created)
DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DE 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE LIPOPOLYSACCHARIDE BIOSYNTHESIS PROTEIN BPJA.
GS TM0585.
OS Thermotoga maritima.
OC Bacteria; Thermotogales; Thermotoga.
OX NCBI_TaxId=2336;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=MSB8 / DSM 3109;
RX MEDLINE=99287316; PubMed=10360571;
RA Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,
RA Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,
RA McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,
RA Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,

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RA Heidelberg J., Sutton G.G., Fleischmann R.D., Eisen J.A., White O.,
RA Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;
RT "Evidence for lateral gene transfer between Archaea and Bacteria from
RT genome sequence of Thermotoga maritima.";
RL Nature 399:323-329 (1999).
DR EMBL; AE001733; AAC35670.1; -.
DR TIGR; TM0585; -.
DR InterPro; IPR000683; GFO_IDH_MoCA.
DR InterPro; IPR004104; GFO_IDH_MoCA_C.
DR InterPro; IPR003489; Ribosomal_S30.
DR Pfam; PF01408; GFO_IDH_MoCA; 1.
DR Pfam; PF02894; GFO_IDH_MoCA_C; 1.
DR Complete proteome.
KW SEQUENCE 360 AA; 41023 MW; 3B17BCD4A9A4A6EC6 CRC64;

Query Match      8.8%; Score 133; DB 16; Length 360;
Best Local Similarity 23.08; Pred. No. 0.0059;
Matches 65; Conservative 38; Mismatches 103; Indels 76; Gaps 12;

Qy 8 KFGVVVGVGRAGS-----VVRDLRNPSPSAFLNLIGFVSRRELGSID--GVQO-- 56
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 2 KLRIALVCGGRIGQKKHVPALIEQDL--PETVAVCDLVEERANRAAEHPEKSLRPE 58
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 57 --ISLEDAISQVEVAYICESSESHEDYIROFLNACKHVLVEYPMTLSLAAQELWELA 114
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 59 TMTNYRELLKREDVDVISIATESGKHQITMEALEAGKHVLVEKPMALSTKHMNMVVELS 118
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 115 BOKGKVLHEEHVELLMEEFAFLKKEVVGKDLKGLSLFTSDPLEDRFGFPAPFSRLT 174
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 119 KQKN-----LKLGVFF-----QNRFPNPVQVEVRKKLD 145
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 175 WLVSDFGSLVSATLEERKEDQYMKMTVCLETEKKSPLSW--TEERGPGLKRNRYLSF 232
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 146 --SAGFGKIFASVAVRNRNEDYKQA-----SHRGTWEMDGGVLMNQ--STH 190
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 233 -----FKSGSLENPNRVGNKN---IFLKDNIFVOKLLG 264
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 191 AIDLLQWFLGGEIEEYGHITANTNHPYIEADEGFAIVKFKG 232

RESULT 12
O23580 PRELIMINARY; PRT; 364 AA.
ID O23580
AC O23580;
DT 01-JAN-1998 (TrEMBLrel. 05, Created)
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE INOSITOL 2-DEHYDROGENASE HOMOLOG (INOSITOL 2-DEHYDROGENASE LIKE
DE PROTEIN).
GN AT4G17370.
OS Arabidopsis thaliana (Mouse-ear cress).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
OC eurosids II; Brassicales; Brassicaceae; Arabidopsids.
OX NCBI_TaxID=3702;
RN [1]
RS SEQUENCE FROM N.A.
RX MEDLINE=98121113; PubMed=9461215;
RA Bevan M., Bancroft I., Bent E., Love K., Goodman H., Dean C.,
RA Bergkamp R., Dirkse W., van Staveren M., Stiekema W., Drost L.,
RA Ridley P., Hudson S.A., Patel K., Murphy G., Piffanelli P., Wedler H.,
RA Wedler E., Wambutt R., Weitzenger T., Pohl T.M., Terry N.,
RA Gielen J., Villarroel R., De Clerck R., van Montagu M., Lecharny A.,
RA Auborg S., Gy I., Kreis M., Lao N., Kavanagh T., Hempel S., Kotter P.,
RA Entian K.D., Rieger M., Schaeffer M., Funk B., Mueller-Auer S.,
RA Slivey M., James R., Montfort A., Pons A., Puigdomenech P., Douka A.,
RA Voukelatou E., Millon D., Hatzopoulos P., Piravandi E., Obermaier B.,
RA Hilbert H., Duesterhoft A., Moores T., Jones J.D.G., Eneva T.,
RA Palme K., Benes V., Rachman S., Ansoorge W., Cooke R., Berger C.,
RA Delseny M., Voet M., Volckaert G., Mewes H.W., Klosterman S.,
RA Schueller C., Chalwatiz N.;
RT "Analysis of 1.9 Mb of contiguous sequence from chromosome 4 of
RT Arabidopsis thaliana.";

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RL Nature 391:485-488 (1998).
RN [2]
RS SEQUENCE FROM N.A.
RX EU Arabidopsis sequencing project;
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; Z97343; CAB10518.1; -.
DR EMBL; AL161546; CAB78740.1; -.
DR InterPro; IPR000683; GFO_IDH_MoCA.
DR InterPro; IPR004104; GFO_IDH_MoCA_C.
DR Pfam; PF01408; GFO_IDH_MoCA; 1.
DR Pfam; PF02894; GFO_IDH_MoCA_C; 1.
DR Complete proteome.
KW SEQUENCE 364 AA; 40260 MW; B56312BD6CF01B95 CRC64;

Query Match      8.8%; Score 132.5; DB 10; Length 364;
Best Local Similarity 22.7%; Pred. No. 0.0066;
Matches 60; Conservative 50; Mismatches 89; Indels 65; Gaps 13;

Qy 8 KFGVVVGVGRAGSVRMDLR-----NPHSSAFNLN-----IGFVSRRELGSI 51
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 11 KYGIVGIGMMGREHLINLHRLRQGLAVVCTADPHPPSQLLAIELAQSGW----ELKVF 66
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 52 DGVOOISLEDAISQVEVAYICESSESHEDYIROFLNACK--HVLVEYPMTLSLAAQOE 109
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 67 SG-----HEELLSELCDVIWSSPNMTHQILMDIINYSKPHHVLVEKPLCTTTVADCKQ 121
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 110 LWELAEQKGVLEHEHVEL-LMEEFAFLKKEVVGKDLKGLSLFTSDPLEDRFGFPAPFS 168
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 122 VLEAAKRSRDMVQVGLERYMPPVAKLIEQVGRDF--GNVKMA--IREHREPPFLVKV 177
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 169 GISRL-TW-----LVSLFGLSLSVATLEERKEDQYMKMTVCLETEKKSPLSWI 216
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 178 GLNKMGLMTLVEKCHCFDLMRLFAGAN-----PVCVMASGMDVNHK 220
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 217 EE-----KPGGLKRNRYLSFHKSG 236
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 221 DEVYGGKVPDIIDNAYVIIIEFDNG 244

RESULT 13
O9CF7 PRELIMINARY; PRT; 324 AA.
ID O9CF7
AC O9CF7;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-OCT-2001 (TrEMBLrel. 18, Last annotation update)
DE OXIDOREDUCTASE.
GN YPJF.
OS Lactococcus lactis (subsp. lactis) (Streptococcus lactis).
OC Bacteria; Firmicutes; Bacillus/Clostridium group; Streptococcaceae;
OC Lactococcus.
OX NCBI_TaxID=1360;
RN [1]
RS SEQUENCE FROM N.A.
RX STRAIN=IL1403;
RX MEDLINE=21235186; PubMed=11337471;
RA Bolotin A., Wincker P., Manger S., Jaillon O., Malarne K.,
RA Weissenbach J., Ehrlich S.D., Sorokin A.;
RT "The complete genome sequence of the lactic acid bacterium Lactococcus
RT lactis ssp. lactis IL1403.";
RL Genome Res. 11:731-753 (2001).
DR EMBL; AE006386; AAK05652.1; -.
DR InterPro; IPR000683; GFO_IDH_MoCA.
DR Pfam; PF01408; GFO_IDH_MoCA; 1.
DR Complete proteome.
KW SEQUENCE 324 AA; 36603 MW; DBF47D6684EB259C CRC64;

Query Match      8.7%; Score 131.5; DB 16; Length 324;
Best Local Similarity 21.8%; Pred. No. 0.0067;
Matches 65; Conservative 44; Mismatches 88; Indels 101; Gaps 13;

Qy 8 KFGVV-----VVGVRAGSVRMDLRNPHSSAFNLNIGFVSRRELGSDGVQOIS 58
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 3 KIGIMGAAKIVPRFVAGVKESGA-----EVTGIAARNK-----EKAQKAA 43
| : : : : : : : : : : : : : : : : : : : : : : : : : : : :

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Search completed: November 1, 2002, 14:49:42
Job time : 56.7749 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:41:32 ; Search time 15.2283 Seconds
(without alignments)
752.611 Million cell updates/sec

Title: US-09-606-129a-1

Perfect score: 1508

Sequence: 1 MNAEPRKFGVVGVGVGRAG.....RILHCLGLAEIQTQKCCSRK 296

Scoring table: BLOSUM62

Gapop 10.0 , Capext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1508	100.0	296	1 BIEA_HUMAN	P53004 homo sapien
2	1245.5	82.6	295	1 BIEA_RAT	P46844 rattus norv
3	152.5	10.1	345	1 YHXX_ECOLI	P46853 escherichia
4	134	8.9	371	1 Y816_SYNY3	P74041 synecocyst
5	118.5	7.9	358	1 YVAA_BACSU	O32223 bacillus su
6	114.5	7.6	328	1 YULF_BACSU	O05265 bacillus su
7	111	7.4	341	1 YRBE_BACSU	P75931 escherichia
8	105.5	7.0	307	1 MVIM_ECOLI	Q05184 pseudomonas
9	104	6.9	410	1 PHT4_PSEPU	Q44258 comamonas t
10	103.5	6.9	397	1 CBAC_COMTE	P40332 bacillus su
11	103	6.8	342	1 YISS_BACSU	P77376 escherichia
12	103	6.8	346	1 YDGJ_ECOLI	Q04869 saccharomyc
13	101.5	6.7	349	1 YW94_YEAST	Q07982 zymomonas m
14	101.5	6.7	439	1 GFO_ZYMMO	P47769 mycobacteri
15	100.5	6.7	1316	1 RPOC_MYCTU	O06238 enterococcu
16	98	6.5	988	1 TNP6_ENTFC	P27059 astasia lon
17	97.5	6.5	1076	1 RPOB_ASTLO	P54394 bacillus su
18	97	6.4	931	1 DING_BACSU	Q08378 homo sapien
19	96	6.4	579	1 G160_HUMAN	P37168 rhizobium m
20	95	6.3	307	1 MVIM_SALTY	P49305 rhizobium m
21	95	6.3	334	1 YMO1_RHIME	P02549 homo sapien
22	95	6.3	2418	1 SPCA_HUMAN	Q62209 mus musculu
23	94.5	6.3	993	1 SCPL_MOUSE	P42599 escherichia
24	94	6.2	328	1 YGJR_ECOLI	P12626 azotobacter
25	94	6.2	533	1 ANFA_AZOVI	O67638 aquifex aeo
26	93	6.2	316	1 YH58_AQUAE	Q13439 homo sapien
27	92.5	6.1	2230	1 GOG4_HUMAN	O68965 rhizobium m
28	92	6.1	330	1 M12D_RHIME	P57208 buchnera ap
29	92	6.1	468	1 6PGD_BUCAI	P42499 glycine max
30	92	6.1	1156	1 FLIF_SOYBN	P57175 buchnera ap
31	90.5	6.0	545	1 PHIE_BUCAI	O75330 homo sapien
32	90.5	6.0	724	1 HMMR_HUMAN	P07149 s fatty aci
33	90.5	6.0	2051	1 FAS1_YEAST	

RESULT 1	BIEA_HUMAN	STANDARD;	PRT;	296 AA.
ID	BIEA_HUMAN			
AC	P53004;			
DT	01-OCT-1996 (Rel. 34, Created)			
DT	01-OCT-1996 (Rel. 34, Last sequence update)			
DT	16-OCT-2001 (Rel. 40, Last annotation update)			
DE	Biliverdin reductase A precursor (EC 1.3.1.24) (Biliverdin-IX alpha-reductase).			
DE	BLVRA OR BLVR OR BVR.			
GN	Homo sapiens (Human).			
OS	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=Placenta;			
RX	MEDLINE=96202961; PubMed=8631357;			
RA	Maines M.D., Polevoda B.V., Huang T.-J., McCoubrey W.K. Jr.;			
RT	"Human biliverdin IXalpha reductase is a zinc-metalloprotein.			
RT	Characterization of purified and Escherichia coli expressed			
RT	enzymes.";			
RL	Eur. J. Biochem. 235:372-381(1996).			
RN	[2]			
RP	SEQUENCE FROM N.A.			
RA	Komuro A., Tobe T., Nakano Y., Yamaguchi T., Tomita M.;			
RL	Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.			
RN	[3]			
RP	SEQUENCE OF 1-117 FROM N.A.			
RA	Cordes M., Wollam C., Carter T.;			
RL	Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.			
RN	[4]			
RP	SEQUENCE OF 3-36; 48-74 AND 228-248.			
RC	TISSUE=Liver;			
RX	MEDLINE=9314333; PubMed=8424666;			
RA	Maines M.D., Trakshel G.M.;			
RT	"Purification and characterization of human biliverdin reductase.";			
RL	Arch. Biochem. Biophys. 300:320-326(1993).			
RN	[5]			
RP	SEQUENCE OF 3-22.			
RC	TISSUE=Liver;			
RX	MEDLINE=95014177; PubMed=7929092;			
RA	Yamaguchi T., Komoda Y., Nakajima H.;			
RT	"Biliverdin-IX alpha reductase and biliverdin-IX beta reductase from			
RT	human liver. Purification and characterization.";			
RL	J. Biol. Chem. 269:24343-24348(1994).			
CC	-/- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN.			
CC	-/- CATALYTIC ACTIVITY: Bilirubin + NAD(P)(+) = biliverdin + NAD(P)H.			
CC	-/- COFACTOR: BINDS ONE ZINC ION. HAS DUAL PH/COFACTOR (NADH, NADPH)			
CC	-/- SPECIFICITY. USES NADH AT THE ACIDIC PH RANGE (6-6.7) AND NADPH AT"			
CC	THE ALKALINE RANGE (8.5-8.7).			
CC	-/- PATHWAY: FINAL STEP IN HEME METABOLISM.			
CC	-/- SUBUNIT: MONOMER.			
CC	-/- SUBCELLULAR LOCATION: Cytoplasmic.			
CC	-/- TISSUE SPECIFICITY: LIVER.			
CC	-/- SIMILARITY: TO E. COLI YHHX.			

34	90.5	6.0	2415	1 SPCA_DROME	P13395 drosophila
35	90	6.0	528	1 UGA3_YEAST	P26370 saccharomyc
36	90	6.0	1679	1 YIO9_YEAST	P40457 saccharomyc
37	90	6.0	3911	1 AKAS_HUMAN	Q99996 h a-kinase
38	89.5	5.9	386	1 DEGS_BACBR	P54663 bacillus br
39	89.5	5.9	494	1 PRE_STRAG	P13925 streptococc
40	89	5.9	722	1 MFPI_TOBAC	O9m714 nicotiana t
41	88.5	5.9	792	1 RECG_AQUAE	O67837 aquifex aeo
42	88.5	5.9	1316	1 RPOC_MYCLE	P30761 mycobacteri
43	88.5	5.9	1548	1 SMCY_MOUSE	O62240 mus musculu
44	88	5.8	367	1 YG86_STRPN	Q34728 streptococc
45	87.5	5.8	271	1 PURR_LACLA	O53065 lactococcu

ALIGNMENTS

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CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC -----
CC EMBL; X93086; CAA63635.1; -
CC EMBL; U34877; AAC35588.1; -
CC EMBL; AC005189; AAC25526.1; -
CC MIM; 109750; -
CC InterPro; IPR000683; GFO_IDH_MocA.
CC Pfam; PF01408; GFO_IDH_MocA; 1.
CC Oxidoreductase; NAD; NADP; Zinc.
KW PROPEP 1 2
FT CHAIN 3 296 BILIVERDIN REDUCTASE A.
FT DOMAIN 11 16 POLY-VAL.
FT METAL 280 280 ZINC (POTENTIAL).
FT METAL 281 281 ZINC (POTENTIAL).
FT METAL 292 292 ZINC (POTENTIAL).
FT METAL 293 293 ZINC (POTENTIAL).
FT CONFLICT 3 3 A -> T (IN REF. 2).
FT CONFLICT 154 155 SD -> AG (IN REF. 2).
FT CONFLICT 160 160 D -> E (IN REF. 2).
SQ SEQUENCE 296 AA; 33488 MW; 0DFD3B386F4DFC0A CRC64;

Query Match 100.0%; Score 1508; DB 1; Length 296;
Best Local Similarity 100.0%; Pred. No. 1.2e-108;
Matches 296; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNAEPERKFGVVVGVGRAGSVRMRLRNPSPSAFLNLIGFVSRRELGSIDGVQOISLE 60
Db 1 MNAEPERKFGVVVGVGRAGSVRMRLRNPSPSAFLNLIGFVSRRELGSIDGVQOISLE 60

QY 61 DALSSQEEVAYICSSSSSHEDYIROFLNAGKHVLVEYPMTLSLAAQELWELAEQKGV 120
Db 61 DALSSQEEVAYICSSSSSHEDYIROFLNAGKHVLVEYPMTLSLAAQELWELAEQKGV 120

QY 121 LHEEHVELLMEERAFLLKKEVVGKDLKLSLFTSDPLEEDRFPGFAPSGISRLTLVLSLF 180
Db 121 LHEEHVELLMEERAFLLKKEVVGKDLKLSLFTSDPLEEDRFPGFAPSGISRLTLVLSLF 180

QY 181 GELSLVSATLEERKEQYMKMTVCLETEKKSPLSWIEEKGPGGLKRNRYLSFHFHKSGLN 240
Db 181 GELSLVSATLEERKEQYMKMTVCLETEKKSPLSWIEEKGPGGLKRNRYLSFHFHKSGLN 240

QY 241 VPNVGNKNIFLKDQNIQFVKLLGQFSEKELAAEKRRILHCLGLAEIQQYCCSRK 296
Db 241 VPNVGNKNIFLKDQNIQFVKLLGQFSEKELAAEKRRILHCLGLAEIQQYCCSRK 296
```

```
RESULT 2
ID BIEA_RAT
AC P46844;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 15-JUL-1999 (Rel. 38, Last annotation update)
DE Blliverdin reductase A precursor (bc 1.3.1.24) (Blliverdin-IX alpha-
DE reductase).
GN BLVRA OR BLVR.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_Taxid=10116;
RN [1]
SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC TISSUE=Kidney;
RX MEDLINE=92156147; PubMed=1371282;
RA Fakhrat H., Mains M.D.;
RT Expression and characterization of a cDNA for rat kidney blliverdin
```

```
RT reductase. Evidence suggesting the liver and kidney enzymes are the
RT same transcript product."
RT J. Biol. Chem. 267:4023-4029(1992).
RN [2]
RP MUTAGENESIS.
RX MEDLINE=94291657; PubMed=8020496;
RA McCoubrey W.K. Jr., Mains M.D.;
RT "Site-directed mutagenesis of cysteine residues in blliverdin
RT reductase. Roles in substrate and cofactor binding.";
RL Eur. J. Biochem. 222:597-603(1994).
CC -!- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN; DISPLAYS TWO DISTINCT
CC PH OPTIMA USING A DIFFERENT COFACTOR AT EACH PH: NADH AT THE LOWER
CC PH 6.7-6.9 RANGE AND NADPH AT PH 8.5-8.7. NADPH, HOWEVER, IS THE
CC PROBABLE COFACTOR IN BIOLOGICAL SYSTEMS.
CC -!- CATALYTIC ACTIVITY: Bllirubin + NAD(P)(+) = blliverdin + NAD(P)H.
CC -!- COFACTOR: BINDS ONE ZINC ION.
CC -!- PATHWAY: FINAL STEP IN HEME METABOLISM.
CC -!- SUBUNIT: MONOMER (BY SIMILARITY).
CC -!- SUBCELLULAR LOCATION: Cytoplasmic.
CC -!- SIMILARITY: TO E-COLI YHHX.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; M81681; AAA40830.1; -
CC InterPro; IPR000683; GFO_IDH_MocA.
CC Pfam; PF01408; GFO_IDH_MocA; 1.
KW Oxidoreductase; NAD; NADP; Zinc.
FT PROPEP 1 2
FT CHAIN 3 295 BILIVERDIN REDUCTASE A.
FT DOMAIN 11 16 POLY-VAL.
FT METAL 279 279 ZINC (POTENTIAL).
FT METAL 280 280 ZINC (POTENTIAL).
FT METAL 291 291 ZINC (POTENTIAL).
FT METAL 292 292 ZINC (POTENTIAL).
FT MUTAGEN 73 73 C->A: LOSS OF ACTIVITY.
FT MUTAGEN 280 280 C->A: REDUCED ACTIVITY.
FT MUTAGEN 291 291 C->A: REDUCED ACTIVITY.
SQ SEQUENCE 295 AA; 33565 MW; 219C8EA96C150588 CRC64;

Query Match 82.6%; Score 1245.5; DB 1; Length 295;
Best Local Similarity 82.4%; Pred. No. 1.6e-88;
Matches 244; Conservative 28; Mismatches 23; Indels 1; Gaps 1;

QY 1 MNAEPERKFGVVVGVGRAGSVRMRLRNPSPSAFLNLIGFVSRRELGSIDGVQOISLE 60
Db 1 MDAEPKRKFGVVVGVGRAGSVRLDLKDPK-SAAFLNLIGFVSRRELGSIDVQISLE 59

QY 61 DALSSQEEVAYICSSSSSHEDYIROFLNAGKHVLVEYPMTLSLAAQELWELAEQKGV 120
Db 60 DALRSQEIDVAYICSSSSSHEDYIROFLQAGKHVLVEYPMTLSFQAAQELWELAAQKGV 119

QY 121 LHEEHVELLMEERAFLLKKEVVGKDLKLSLFTSDPLEEDRFPGFAPSGISRLTLVLSLF 180
Db 120 LHEEHVELLMEERAFLLKKEVVGKDLKLSLFTSDPLEEDRFPGFAPSGISRLTLVLSLF 179

QY 181 GELSLVSATLEERKEQYMKMTVCLETEKKSPLSWIEEKGPGGLKRNRYLSFHFHKSGLN 240
Db 180 GELSLVSATLEERKEQYMKMTVCLETEKKSPLSWIEEKGPGGLKRNRYLSFHFHKSGLN 239

QY 241 VPNVGNKNIFLKDQNIQFVKLLGQFSEKELAAEKRRILHCLGLAEIQQYCCSRK 296
Db 240 VPSVGVNKNIFLKDQDIFVQKLLDQVSAEDLAAEKRRIMHCLGLASDIQKLCQKK 295

RESULT 3
YHHX_ECOLI
ID YHHX_ECOLI STANDARD; PRT; 345 AA.
```



```
CC -!- SIMILARITY: TO ALCALIGENES SP. 1-CARBOXY-3-CHLORO-3,4-
CC DIHYDROXYCYCLOHEXA-1,5-DIENE DEHYDROGENASE.
CC -----
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CC -----
DR EMBL: D13229; BAA02512.1; -
DR InterPro: IPR000683; GFO_IDH_MOCA.
DR InterPro: IPR004104; GFO_IDH_MOCA_C.
DR Pfam: PF01408; GFO_IDH_MOCA; 1.
DR Pfam: PF02894; GFO_IDH_MOCA_C; 1.
DR PfamId: Oxidoreductase; Aromatic hydrocarbons catabolism.
KW SEQUENCE 410 AA; 45644 MW; 0D1A95B019DCAC1A CRC64;
SQ -----
Query Match 6.9%; Score 104; DB 1; Length 410;
Best Local Similarity 30.1%; Pred. No. 0.8;
Matches 34; Conservative 15; Mismatches 46; Indels 18; Gaps 3;

QY 2 NAEPRKFGVVVGVGRAGSVR-----MRDLRNPSPSSAFLNLIGVSRRELGSIDGVQVQISLED 51
D 1 : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
D 5 HAESTARLRGVLGRAFTLMLPTFLADRR-----VOLVGACDPREQARRQFERDF 56
QY 52 DGVOQISLEDALDSQSEVEVAICSESSSHEDYIRQFLNAGKHVLEVPMTLSL 104
D 1 : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
D 57 DAPAYETIEDLAANDSNVDALYIAHPHFQHAETHRIAAANRKHVLEKPMALSL 109

RESULT 10
CBAC_COMTE STANDARD; PRT; 397 AA.
AC Q44258;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE 1-carboxy-3-chloro-3,4-dihydroxycyclo hexa-1,5-diene dehydrogenase
DE (EC 1.-.-.-).
GN CBAC.
OS Comamonas testosteroni (Pseudomonas testosteroni).
OC Bacteria; Proteobacteria; beta subdivision; Comamonadaceae; Comamonas.
OX NCBI_TaxID=285;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BR60 / ISOLATE BLOODY RUN CREEK; TRANSPOSON=Tn5271;
RX MEDLINE=37464069; PubMed=9322760;
RA Nakatsu C.H., Providenti M., Wyndham R.C.;
RT "The cis-diol dehydrogenase cbaC gene of Tn5271 is required for
RT growth on 3-chlorobenzoate but not 3,4-dichlorobenzoate.";
RL Gene 196:209-218(1997).
CC -!- SIMILARITY: TO P.PUTIDA PHT4.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: U18133; AAC45718.1; -
DR InterPro: IPR000683; GFO_IDH_MOCA.
DR InterPro: IPR004104; GFO_IDH_MOCA_C.
DR Pfam: PF01408; GFO_IDH_MOCA; 1.
DR Pfam: PF02894; GFO_IDH_MOCA_C; 1.
DR PfamId: Oxidoreductase; Aromatic hydrocarbons catabolism.
KW SEQUENCE 397 AA; 44090 MW; EAD6115BCD61C042 CRC64;
SQ -----
Query Match 6.9%; Score 103.5; DB 1; Length 397;
Best Local Similarity 29.0%; Pred. No. 0.84;
```

```
Matches 36; Conservative 19; Mismatches 50; Indels 19; Gaps 3;

QY 13 VVGVGRA-----GSVMRDLRNPSPSSAFLNLIGVSRRELGSIDGVQVQISLED 61
D 1 : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
D 5 VVGKGFAMLMPTFLMDRRVQLVAASDTDP-----LSLRQFKADFPAAAVHG-----DIES 56
QY 62 ALSQSEVEVAICSESSSHEDYIRQFLNAGKHVLEVPMTLSLAAQAQELWELAEOKGKYL 121
D 1 : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
D 57 LCKNPDEVVYIGTPHQFHAVHAETALNAGKHVLEKPMVLTLEDCRMNACQARAGYL 116
QY 122 HEEH 125
D 1 : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
D 117 IVGH 120

RESULT 11
YISS_BACSU STANDARD; PRT; 342 AA.
AC P40332; O07924;
DT 01-FEB-1995 (Rel. 31, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Hypothetical oxidoreductase yiss (EC 1.-.-.-).
GN YISS.
OS Bacillus subtilis.
OC Bacteria; Firmicutes; Bacillus/Clostridium group;
OC Bacillus/Staphylococcus group; Bacillus.
OX NCBI_TaxID=1423;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=98015416; PubMed=9353932;
RA Roche B., Autret S., Medina N., Levine A., Vannier F., Seror S.J.;
RT "A Bacillus subtilis chromosome segment at the 100 degrees to 102
RT degrees position encoding 11 membrane proteins.";
RL Microbiology 143:3309-3312(1997).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=168;
RA Oudega B., Koningsstein G., Dueterhoeft A.;
RL Submitted (APR-1997) to the EMBL/Genbank/DBJ databases.
RN [3]
RP SEQUENCE OF 1-92 FROM N.A.
RC STRAIN=168 / DB104;
RX MEDLINE=94012500; PubMed=8407808;
RA Bussey L.B., Switzer R.L.;
RT "The degA gene product accelerates degradation of Bacillus subtilis
RT phosphoribosylpyrophosphate amidotransferase in Escherichia coli.";
RL J. Bacteriol. 175:6348-6353(1993).
CC -!- SIMILARITY: BELONGS TO THE GFO/IDH/MOCA FAMILY.
CC -----
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CC -----
DR EMBL: Y09476; CAA70648.1; -
DR EMBL: Z93940; CAB07962.1; -
DR EMBL: L08822; -; NOT_ANNOTATED_CDS.
DR EMBL: Z99109; CAB12924.1; -
DR PIR: C36940; C36940.
DR Subtilist; BGL1065; yiss.
DR InterPro: IPR000683; GFO_IDH_MOCA.
DR InterPro: IPR004104; GFO_IDH_MOCA_C.
DR Pfam: PF01408; GFO_IDH_MOCA; 1.
DR Pfam: PF02894; GFO_IDH_MOCA_C; 1.
DR PfamId: Oxidoreductase; Complete proteome.
KW Hypothetical protein; Oxidoreductase; Complete proteome.
SQ SEQUENCE 342 AA; 37483 MW; B6DP205F9E4B0103 CRC64;

Query Match 6.8%; Score 103; DB 1; Length 342;
Best Local Similarity 25.2%; Pred. No. 0.76;
```


Matches 41; Conservative 32; Mismatches 70; Indels 20; Gaps 7;

```
QY 6 ERKFGVVVGVRAGSRMRDLRNPSPSAFL-----NLIGFVSR--RELGSIDGVOQIISL 59
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 2 EHQVRCVAVLGLGRGLGYHAKNLVTSVPGAKLVGVGDKLKGRAEQVAREL-----GIEKWE 57
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
QY 60 E--DALSSQVEVAYICESSESHEDYIROFLNAGKHVLVEYPMTSLAAAOELWELAEQK 117
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 58 DPYEVLEDPGIDAVIIVTPTSTHGMIIKAENGKQIFVEKPLTSLSEESKAASEKVKET 117
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
QY 118 GKVLEHEHVVELLMEEFAFLKVEV-----VGKDL-LKGSLLFTSD 155
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 118 GVICQVGMRRRFDPAYADAKRRRIDAGEIGKPIYYKG---ETRD 157
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
```

RESULT 12

```
YDGL_ECOLI
ID YDGL_ECOLI STANDARD; PRT; 346 AA.
AC P77376;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Hypothetical oxidoreductase ydgJ (EC 1.-.-.-).
GN YDGJ OR B1624.
OS Escherichia coli.
OC Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
OC Escherichia.
OX NCBI_TaxID=562;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=K12 / MG1655;
RX MEDLINE=97426617; PubMed=9278503;
RA Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
RA Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
RA Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
RA Mau B., Shao Y.;
RT "The complete genome sequence of Escherichia coli K-12.";
RL Science 277:1453-1474(1997).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=K12;
RX MEDLINE=97251357; PubMed=9097039;
RA Alba H., Baba T., Fujita K., Hayashi K., Inada T., Isono K., Itoh T.,
RA Kasai H., Kashimoto K., Kimura S., Kitakawa M., Kitagawa M.,
RA Makino K., Miki T., Mizobuchi K., Mori H., Mori T., Motomura K.,
RA Nakade S., Nakamura Y., Rashimoto H., Nishio Y., Oshima T., Saito N.,
RA Sempel G., Seki Y., Sivasubramam S., Tagami H., Takeda J.,
RA Takemoto K., Takeuchi Y., Wada C., Yamamoto Y., Horiuchi T.;
RT "A 570-kb DNA sequence of the Escherichia coli K-12 genome
corresponding to the 28.0-40.1 min region on the linkage map.";
RL DNA Res. 3:363-377(1996).
CC -1- SIMILARITY: BELONGS TO THE YHXX FAMILY OF OXIDOREDUCTASES.
CC
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```

Query Match 6.8%; Score 103; DB 1; Length 346;
Best Local Similarity 30.7%; Pred. No. 0.77;
Matches 39; Conservative 22; Mismatches 52; Indels 14; Gaps 4;

```
QY 68 VEYAIICESSESHEDYIROFLNAGKHVLVEYPMTSLAAAOELWELAEQKQKVLHEEIVE 127
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 65 IDLIVITPNDTHPLAKAALAEAGKVVVDKPTVTLSQARELDALAKSIGRVLVSFIHR 124
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
QY 128 LMEEFAFLK-----KEVVGDKLLKGSLLFTSDPLEEDRF---GPPAFSGI-----SRLT 174
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 125 RWDSDFLTLKGLLAEGVLGEYAFESHFDRPRPOVDRWRQGGPG-SGIWYDLAPHLILD 183
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
QY 175 WLVSIFG 181
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 184 QAITLFG 190
   | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
```

RESULT 13

```
YM94_YEAST
ID YM94_YEAST STANDARD; PRT; 349 AA.
AC Q04869;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Hypothetical 38.2 kDa protein in PRE5-FET4 intergenic region.
GN YMR315W OR YMR924.07.
OS Saccharomyces cerevisiae (Baker's yeast).
OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC Saccharomycetales; Saccharomycetaceae; Saccharomycetes.
OX NCBI_TaxID=4932;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=S288C / AB972;
RA Churcher C.M., Louis E.J., Barrell B.G., Rajandream M.A., Walsh S.V.;
RL Submitted (NOV-1995) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: SOME, TO THE YHXX FAMILY OF OXIDOREDUCTASES.
CC
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```
DR EMBL; Z54141; CAA90833.1; -
DR SGD; S0004932; YMR315W.
DR InterPro; IPR000683; GFO_IDH_MoCA.
DR InterPro; IPR004104; GFO_IDH_MoCA_C.
DR Pfam; PF01408; GFO_IDH_MoCA; 1.
DR Pfam; PF02894; GFO_IDH_MoCA_C; 1.
KW Hypothetical protein.
SQ SEQUENCE 349 AA; 38215 MW; 77C7F72321BCADIF CRC64;
```



Query Match 6.7%; Score 101.5; DB 1; Length 349;  
Best Local Similarity 21.4%; Pred. No. 1;  
Matches 46; Conservative 40; Mismatches 86; Indels 43; Gaps 6;



```
QY 58 SLEDALSSQVEVAYICESSESHEDYIROFLNAGKHVLVEYPMTSLAAAOELWELAEQK 117
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 60 NLDEILNDPHVDYIDALLPAQFNADIVEKAVKAGKPVILEKPIAANLQDAKEIVKIAEST 119
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
QY 118 GK-----VLHEEHVELLMEEFAFLKVEVGVGKLLKGSLLFTSDPLEEDRF- 162
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 120 PLPVGVAENWLYLPCIKIAKEIQEIKIGPVAFTHNS-TGPFVTQNKYLTITWQKPEHIG 178
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
QY 163 GPAPFSGISRLTWLVSFLGSLVSATLERKE-----DOYMKMTVCLETKKSPLSWIEE 218
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 179 GFLSDGGVHQLALVISLLGFGSVSALTRQVRERSGADDIVFATVOL----- 225
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
QY 219 KGPGILKRNRYLSFHFKSGSLENPNVGNVGNKIFLK 253
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
```


```


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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:58 ; Search time 31.4084 Seconds
(without alignments)
905.569 Million cell updates/sec

Title: US-09-606-129A-1

Perfect score: 1508

Sequence: 1 MNAEPERKFGVVGVGVRAG.....RILHCLGLAEIEIKYCCSRK 296

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR-71.*

1: pir1.*

2: pir2.*

3: pir3.*

4: pir4.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	1508	100.0	296	2	S62624
2	1490	98.8	296	2	G02066
3	1245.5	82.6	295	2	A42268
4	221.5	14.7	322	2	A42324
5	218.5	14.5	328	2	S74645
6	155.5	10.3	371	2	F90486
7	152.5	10.1	345	2	C65140
8	150.5	10.0	345	2	AH0994
9	148.5	9.8	345	2	A91165
10	148.5	9.8	345	2	A86011
11	142	9.4	318	1	H69216
12	139	9.2	393	2	D69803
13	136.5	9.1	374	2	AE2337
14	134	8.9	371	2	S75555
15	133	8.8	338	2	AE1119
16	133	8.8	360	2	B72359
17	132.5	8.8	364	2	A71443
18	131.5	8.7	324	2	B86819
19	128.5	8.5	368	2	T39296
20	128.5	8.5	369	2	T38428
21	125.5	8.3	352	2	T42744
22	124	8.2	343	2	A11428
23	123	8.2	356	2	AC2319
24	122.5	8.1	323	2	AH1470
25	122	8.1	338	2	AH1479
26	121.5	8.1	346	2	F89784
27	121.5	8.1	371	1	D71201
28	119.5	7.9	323	2	AF1109
29	119.5	7.9	324	2	AE3650

ALIGNMENTS

RESULT 1

S62624

billiverdin reductase (EC 1.3.1.24) - human
N:Alternate names: billiverdin IX-alpha reductase

C:Species: Homo sapiens (man)

C>Date: 28-Oct-1996 #sequence.revision 09-May-1997 #text_change 21-Jul-2000

C:Accession: S62624; S62622; S29736

R:Maines, M.D.; Polevoda, B.V.; Huang, T.J.; McCoubrey Jr., W.K.

Eur. J. Biochem. 235, 372-381, 1996

A:Title: Human billiverdin IX-alpha reductase is a zinc-metalloprotein. Characterization

A:Reference number: S62622; MUID:96202961

A:Accession: S62624

A:Molecule type: mRNA

A:Residues: 1-296 <MAI>

A:Cross-references: EMBL:X93086; NID:g1246748; PIDN:CAA63635.1; PID:g1246749

A:Accession: S62622

A:Molecule type: protein

A:Residues: 3-24, 'X', 26-27, 'X', 29-36, 48-74; 228-234; 235-248 <MAF>

R:Maines, M.D.; Frakeshel, G.M.

Arch. Biochem. Biophys. 300, 320-326, 1993

A:Title: Purification and characterization of human billiverdin reductase.

A:Reference number: S29736; MUID:93143333

A:Accession: S29736

A:Molecule type: protein

A:Residues: 3-24, 'X', 26-27, 'X', 29-36, 48-74; 228-234; 235-248 <MAW>

A:Note: the sequence of peptide 1 from page 323 seems not to belong to this protein

C:Genetics:

A:Gene: BVR

C:Keywords: oxidoreductase

F:3-296/Product: billiverdin reductase IX-alpha #status experimental <MAT>

Query Match 100.0%; Score 1508; DB 2; Length 296;

Best Local Similarity 100.0%; Pred. No. 1.2e-109;

Matches 296; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy	1	MNAEPERKFGVVGVGVRAGSVRMRLNPHPSAFLNLIGFVSRREGSDGVQOQISLE	60
Db	1	MNAEPERKFGVVGVGVRAGSVRMRLNPHPSAFLNLIGFVSRREGSDGVQOQISLE	60
Qy	61	DALSSQEVAYICSESSHEDYIRQFLNAGKHVLEYPMTLSLAAQELMELAEQKGV	120
Db	61	DALSSQEVAYICSESSHEDYIRQFLNAGKHVLEYPMTLSLAAQELMELAEQKGV	120
Qy	121	LHEEHVELLMEEFAFLKEVVGVKDLLKGSLLFTSDPLEDRFGFPFAGISRLTWLSLF	180
Db	121	LHEEHVELLMEEFAFLKEVVGVKDLLKGSLLFTSDPLEDRFGFPFAGISRLTWLSLF	180
Qy	181	GELSLVNTLEEREDQYKMTVCLETEKKSPLSWIEKGPGLKRNRYLSFHFSGSLEN	240
Db	181	GELSLVNTLEEREDQYKMTVCLETEKKSPLSWIEKGPGLKRNRYLSFHFSGSLEN	240
Qy	241	VPNVGNKNIFLKDQNIQVQLLGFQSEKELAAEKRLHCLGLAEIEIKYCCSRK	296

Db 241 VPNVGNKNIFLKDQNTFVQKLLGQFSEKELAEKKRILHCLGLAEIQKYCCSRK 296
|||||
RESULT 2
G02066
billerdin reductase (EC 1.3.1.24) - human
N;Alternate names: billeridin IX-alpha reductase
C;Species: Homo sapiens (man)
C;Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 17-Jul-1998
C;Accession: G02066
R;Komuro, A.; Tobe, T.; Nakano, Y.; Yamaguchi, T.; Tomita, M.
submitted to the EMBL Data Library, August 1995
A;Reference number: H00768
A;Accession: G02066
A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA
A;Residues: 1-296 <KOM>
A;Cross-references: EMBL:U34877; NID:g1143231; PID:g1143232
C;Keywords: oxidoreductase

Query Match 98.8%; Score 1490; DB 2; Length 296;
Best Local Similarity 98.6%; Pred. No. 3e-108;
Matches 292; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 MNAEPERKFGVVVGVGRAGSVRMRLRNPHPSAFNLNIGFVSRRELGSIDGVOQISLE 60
|||
DB 1 MNTPEPRKFGVVVGVGRAGSVRMRLRNPHPSAFNLNIGFVSRRELGSIDGVOQISLE 60
|||
QY 61 DALSSQEVAVAYICSSSHEDYIRQFLNAGKHVLYEYPMPTLSLAAQELWELAEQKGV 120
|||||
DB 61 DALSSQEVAVAYICSSSHEDYIRQFLNAGKHVLYEYPMPTLSLAAQELWELAEQKGV 120
|||||
QY 121 LHEEHVELLMEEFAFLKKEVVGKDLLGSLFTSDPLEEDRFGFPAPSGISRLTWLSLF 180
|||||
DB 121 LHEEHVELLMEEFAFLKKEVVGKDLLGSLFTSDPLEEDRFGFPAPSGISRLTWLSLF 180
|||||
QY 181 GELSIVSATLEERKEDQYMKTVCLTEKKSPLSWIEKGGPKLRNRYLSFHFKSGSLEN 240
|||||
DB 181 GELSIVSATLEERKEDQYMKTVCLTEKKSPLSWIEKGGPKLRNRYLSFHFKSGSLEN 240
|||||
QY 241 VPNVGNKNIFLKDQNTFVQKLLGQFSEKELAEKKRILHCLGLAEIQKYCCSRK 296
|||||
DB 241 VPNVGNKNIFLKDQNTFVQKLLGQFSEKELAEKKRILHCLGLAEIQKYCCSRK 296
|||||

RESULT 3
A42268
billerdin reductase (EC 1.3.1.24) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C;Accession: A42268
R;Fakhrai, H.; Maines, M.D.
J. Biol. Chem. 267, 4023-4029, 1992
A;Title: Expression and characterization of a cDNA for rat kidney billeridin reductase.
A;Reference number: A42268; MUID:92156147
A;Accession: A42268
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: nucleic acid; protein
A;Residues: 1-295 <FAK>
A;Cross-references: GB:M81681; NID:g203177; PID:AAAA0830.1; PID:g203178
A;Experimental source: kidney
A;Note: sequence extracted from NCBI backbone (NCBIP:82800)
C;Keywords: liver; oxidoreductase

Query Match 82.6%; Score 1245.5; DB 2; Length 295;
Best Local Similarity 82.4%; Pred. No. 2.8e-89;
Matches 244; Conservative 28; Mismatches 23; Indels 1; Gaps 1;

QY 1 MNAEPERKFGVVVGVGRAGSVRMRLRNPHPSAFNLNIGFVSRRELGSIDGVOQISLE 60
|||||
DB 1 MDAEPERKFGVVVGVGRAGSVRLRLDKDPR-SAAFNLNIGFVSRRELGSIDVLRQISLE 59
|||||

QY 61 DALSSQEVAVAYICSSSHEDYIRQFLNAGKHVLYEYPMPTLSLAAQELWELAEQKGV 120
|||||
DB 60 DALRSQEDVAY ICSSSHEDYIRQFLQAGKHVLYEYPMPTLSFAAQELWELAAQGRV 119
|||||
QY 121 LHEEHVELLMEEFAFLKKEVVGKDLLGSLFTSDPLEEDRFGFPAPSGISRLTWLSLF 180
|||||
DB 120 LHEEHVELLMEEFAFLKKEVVGKDLLGSLFTSDPLEEDRFGFPAPSGISRLTWLSLF 179
|||||
QY 181 GELSIVSATLEERKEDQYMKTVCLTEKKSPLSWIEKGGPKLRNRYLSFHFKSGSLEN 240
|||||
DB 180 GELSIVSATLEERKEDQYMKTVCLTEKKSPLSWIEKGGPKLRNRYLVNFQFTSGSLEE 239
|||||
QY 241 VPNVGNKNIFLKDQNTFVQKLLGQFSEKELAEKKRILHCLGLAEIQKYCCSRK 296
|||||
DB 240 VPSGVGNKNIFLKDQNTFVQKLLDQVSAEDLAEKKRIMHCLGLASDIQKLCHKQK 295
|||||

RESULT 4
AF2324
billerdin reductase [imported] - Anabaena sp. (strain PCC 7120)
C;Species: Anabaena sp.
A;Note: Anabaena sp. (Strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
C;Accession: AF2324
R;Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriku
Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata
DNA Res. 8, 205-213, 2001
A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium
A;Reference number: AB1807; MUID:21595285; PMID:11759840
A;Accession: AF2324
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-322 <KUR>
A;Cross-references: GB:BA000019; PIDN:BA075848.1; PID:g17133284; GSPDB:GN001179
A;Experimental source: strain PCC 7120
C;Genetics:
A;Gene: bvdR

Query Match 14.7%; Score 221.5; DB 2; Length 322;
Best Local Similarity 26.0%; Pred. No. 1e-09;
Matches 87; Conservative 53; Mismatches 109; Indels 85; Gaps 15;

QY 13 VVGVRAGSVRMRLRNPHPSAFNLNIGFVSRRELGSIDGVOQ 56
|||
DB 3 IVGTGYAAKLR-----AAFLDESHLVAIAGSKLERTQTTPAQAYQAEVITCQQ 53
|||

QY 57 ISLEDALSSQEVAVAYICSSSHEDYIRQFLNAGKHVLYEYPMPTLSLAAQELWELAEQ 116
|||
DB 54 L-----VEREDIDLVICTINRDHGAIARAALTAGKHVIVEYPLSVDLTEAEELIALAKT 108
|||

QY 117 KGKVLHEEHVELLMEEFAFLKKEVVGKDLLGSLF-----TSDP-----LEEDRF 162
|||

DB 109 QOKLLHVEHIELLGLHQAALK-----QNLDKVGHFVRYSTINPQNAPRKYTYNHAMF 163
|||

QY 163 GFPAFSGISRLTWLSLFGELSVASFLERK---EDQYMKMTVCLTEKKSPLSW--- 215
|||

DB 164 GFPLIGALSRLRLTDLFGKVFTVNC--HQRYWEIPEYVYQTCFCM-----TOLCFTSGL 216
|||

QY 216 ----IEKGPGL-KRNRYLSFHFKSGSL-----ENVP-NVGNNKINFLKQDN 256
|||

DB 217 LAQVIYKGESLWQPKRKFVHGDNAGALIFDGDGTGFFIQSGESTPVELGTRRGLFAKDT 276
|||

QY 257 IFVOKLLGQFSEKELAEKKRILHCLGLAEIQK 290
|||

DB 277 MVLDDHI---FDGAPLYVYTPPEESLYTLRVADAQR 307
|||

RESULT 5
S74645
billerdin reductase (EC 1.3.1.24) - Synechocystis sp. (strain PCC 6803)
N;Alternate names: hypothetical protein slr1784
C;Species: Synechocystis sp.
A;Variety: PCC 6803

A:Accession: AH0994
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-345 <PAR>
A:CROSS-references: GB:AL513382; PIDN:CAD08084.1; PID:g16505063; GSPDB:GN00176
C:Genetics:
A:Gene: STY4266
C:Superfamily: conserved hypothetical protein b1624

Query Match 10.0%; Score 150.5; DB 2; Length 345;
Best Local Similarity 32.6%; Pred. No. 0.00036;
Matches 43; Conservative 25; Mismatches 55; Indels 9; Gaps 3;

Qy 59 LEDALSQVEVAVICSESSSHEDYIRQFLNAGKHVLVEYPMTLSLAAQAELWELAEQKG 118
| : | : : : : : | : : | : : | : : | : : | : : | : : | : : | : : ||
Db 57 LDEIVGDPQVKLVVCVTHADSFHEYAKRAEAGKNVLVEKPFPTTLAEAKVLFELARSKG 116
| : | : : : : : | : : | : : | : : | : : | : : | : : | : : | : : ||
Qy 119 KVLHEEHVELLMEEFAELKKEV----VGKDILLKSLLFTSDPLEEDRFGFP---AF--SG 169
: | | : : : : : | : : | : : | : : | : : | : : | : : | : : | : : ||
Db 117 LTVPYNRRFDSCLFLAKKAIESGKLGIIEISHDYFRPVAETKPGLPDGAFFVLG 176
: | | : : : : : | : : | : : | : : | : : | : : | : : | : : | : : ||

Qy 170 ISRLTWLVSLEFG 181
: : : : :|||
Db 177 VHTMDQIIISLFG 188
: : : : :|||

RESULT 9
A91165
probable regulator [imported] - Escherichia coli (strain O157:H7, substrain RIMD 0509952)
C:Species: Escherichia coli
C>Date: 18-Jul-2001 #sequence_revision 18-Jul-2001 #text_change 03-Aug-2001
C:Accession: A91165
R:Havashi, T.; Makino, K.; Ohnishi, M.; Kurokawa, K.; Ishii, K.; Yokoyama, K.; Han, C.G.
gasawara, N.; Yasunaga, T.; Kuhara, S.; Shiba, T.; Hattori, M.; Shinagawa, H.
DNA Res. 8, 11-22, 2001
A>Title: Complete genome sequence of enterohemorrhagic Escherichia coli O157:H7 and gen-
A:Reference number: A99629; MUID:21156231; PMID:11258796
A:Accession: A91165
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-345 <HAY>
A:CROSS-references: GB:BA000007; PIDN:BAB37712.1; PID:g13363763; GSPDB:GN00154
A:Experimental source: strain O157:H7, substrain RIMD 0509952
C:Genetics:
A:Gene: ECs4289
C:Superfamily: conserved hypothetical protein b1624

Query Match 9.8%; Score 148.5; DB 2; Length 345;
Best Local Similarity 30.6%; Pred. No. 0.00052;
Matches 41; Conservative 27; Mismatches 53; Indels 13; Gaps 4;

Qy 59 LEDALSQVEVAVICSESSSHEDYIRQFLNAGKHVLVEYPMTLSLAAQAELWELAEQKG 118
| : | : : : : : | : : | : : | : : | : : | : : | : : | : : | : : ||
Db 57 LNEIINDPDVKLVVVCTHADSFHEYAKRAMEGKNVLVEKPFPTTLAQAKLEFALAASKG 116
| : | : : : : : | : : | : : | : : | : : | : : | : : | : : | : : ||

Qy 119 KVLHEEHVELLMEEFAELKKEVGVCKDLKSLFTSD-----PLEDRFGFP---AF-- 167
: | | : : : : : | : : | : : | : : | : : | : : | : : | : : | : : ||
Db 117 LTVPYNRRFDSCLFLAKKAIESGKL--GEIVEVESHFDFYRPVAETKPGLPDGAFFYG 174
: | | : : : : : | : : | : : | : : | : : | : : | : : | : : | : : ||

Qy 168 SGISRLTWLVSLEFG 181
: : : : :|||
Db 175 LGVHTMDQIIISLFG 188
: : : : :|||

RESULT 10
A86011
probable regulator yhhx [imported] - Escherichia coli (strain O157:H7, substrain EDL933)
C:Species: Escherichia coli
C>Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 14-Sep-2001
C:Accession: A86011
R:Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, J.D.; Rose, D.J.; Mayhew
Iller, L.; Grobeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, E.; Potamousis, K.; Apodaca,
Nature 409, 529-533, 2001

A>Title: Genome sequence of enterohemorrhagic Escherichia coli O157:H7.
A:Reference number: A85480; MUID:21074935; PMID:11206551
A:Accession: A86011
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-345 <STO>
A:Cross-references: GB:AE0051174; NID:g12518090; PIDN:AAG58549.1; GSPDB:GN00145; UMG:P:
A:Experimental source: strain O157:H7, substrain EDL933
C:Genetics:
A:Gene: yhhX
C:Superfamily: conserved hypothetical protein b1624

Query Match 9.8%; Score 148.5; DB 2; Length 345;
Best Local Similarity 30.6%; Pred. No. 0.00052;
Matches 41; Conservative 27; Mismatches 53; Indels 13; Gaps 4;

Qy 59 LEDALLSQQEVEVAYICSSSHEDYIRQFLNAGKHVLVEYPMTLSLAAQELWELAEQKG 118
I : I : ::::
Db 57 LNEVLNDPDKLVVVCVTHADSHFEYAKRAMGKGNLVEKPFTPTLAQAELFALAKSKG 116
I : I : ::::
Qy 119 KVLHEEHVELLMEEFAFLKKGWCKDLLKGLSLTSD-----PLEEDRGFP---AF-- 167
I : I : ::::
Db 117 LTVPYPQNRRDSCFLTAKKAIKESGKL--GEIVEVESHFYYRPAETPKGLPODGAFYG 174
I : I : :::: :

Qy 168 SGISRLTWLVSFG 181
I :
Db 175 LGVHTMDQIIISLFG 188
I :

RESULT 11
H69216
3-chlorobenzoate-3,4-dioxygenase dyhydrogenase related protein - Methanobacterium the
C:Species: Methanobacterium thermoautotrophicum
C>Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 21-Jul-2000
C:Accession: H69216
R:Smith, D.R.; Doucette-Stamm, L.A.; Deloughery, C.; Lee, H.; Dubois, J.; Aldredge, T.
; Qiu, D.; Spadafora, R.; Vicaire, R.; Wang, Y.; Wierzbowski, J.; Gibson, R.; Jiwan,
ki, S.; Church, G.M.; Daniels, C.J.; Mao, J.; Rice, P.; Noelling, J.; Reeve, J.N.
J. Bacteriol. 179, 7135-7155, 1997
A>Title: Complete genome sequence of Methanobacterium thermoautotrophicum Delta H: fu
A:Reference number: A69000; MUID:98037514
A:Accession: H69216
A>Status: preliminary; nucleic acid sequence not shown; translation not shown
A:Molecule type: DNA
A:Residues: 1-318 <MTH>
A:Cross-references: GB:AE000863; GB:AE000666; NID:g2621956; PIDN:AAB85373.1; PID:g262
A:Experimental source: strain Delta H
C:Genetics:
A:Gene: MTH875
A:Start codon: TTG
C:Superfamily: Streptomyces griseus strI protein

Query Match 9.4%; Score 142; DB 1; Length 318;
Best Local Similarity 21.0%; Pred. No. 0.0015;
Matches 57; Conservative 50; Mismatches 96; Indels 68; Gaps 9;

Qy 7 RKFGVVGVGRAGSRMR---DLRNPHPSAFTNLIGFYRSRELGSIDGVQQISLEDAL 63
I : I : ||||| I : | I :
Db 2 RQINVGIVGVGAMYNHARVYLUKNAN-LMAVSDIMKGTQLQKVANKYDTFVGVDYENLL 60
I : I : ||||| I : | I :
Qy 64 SSQREVEVAYICSSSHEDYIRQFLNAGKHVLVEYPMTLSLAAQELWELAEQKGVLHE 123
I : I : || :
Db 61 EIPEIEVSVCVPTHYNNVMDALEDHKHVLVEKPIAFTLEEADVKTARKKGLKLT 120
I : I : || :
Qy 124 EHVE-----LMEEFAPFKKEVGVGKDILKGS-----L 150
I : I :
Db 121 GHVERFRNPVQKAKELIENDVIG-DVVSASAKRVGPPPPRIKDVGTIDIAIHDLDMWHY 179
I : I :
Qy 151 LFTSDPLEE-----DRGFPAFGISRILTWL-----VSLFGE 182
I : I : || :
Db 180 LF-SEPVAEVAVNGMSILECEYEDHAIEITKFK-SGITGILEVNWLTPTYKRRLAITGT 237
I : I :
Qy 183 LSLVSATLEERKEQDYMKMTVLCLETEKKSPL 213
I : I :


```
RESULT 15  
AEI119  
oxidoreductase homolog lmo0356 [Imported] - Listeria monocytogenes (strain EGD-e)  
C:Species: Listeria monocytogenes  
C>Date: 27-Nov-2001 #sequence_revision 27-Nov-2001 #text_change 14-Dec-2001  
R:Accession: AEI119  
G:Glaser, P.; Frangeul, L.; Buchrieser, C.; Amend, A.; Baquero, F.; Berche, P.; Bloeker,  
. ; Dominguez-Bernal, G.; Duchaud, E.; Durand, L.; Dussurget, O.; Entian, K.D.; Fsuhl, H.  
D.: Jones, L.M.; Karst, U.  
Science 294, 849-852, 2001  
A:Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; Maitournam, A.; Ma  
Ok, C.; Schluter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J.A.; Voss, H.; Wehlund,  
A::Title: Comparative genomics of Listeria species.  
A:Reference number: AB1077; MOID:21537279; PMID:11679669  
A:Accession: AEI119  
A>Status: preliminary  
A:Molecule type: DNA  
A:Residues: 1-338 <GLA>  
A:Cross-references: GB:NC_003210; PIDN:CAC98435.1; PID:g16409734; GSPDB:GN00177  
A:A:Experimental source: strain EGD-e  
C:Genetics:  
A:Gene: lmo0356  
C:Superfamily: conserved hypothetical protein bl624
```

	Query Match	8.8%	Score 133;	DB 2:	Length 338;
	Best Local Similarity	30.3%;	Pred.	No. 0.0081;	
	Matches	30;	Conservative	26;	Mismatches 31; Indels 12; Gaps 2;

```
QY    21 SVRMRLRNHPSSAFNLIGFVSRRELGSITDGVOOIS-LEDALSSOEVEVAYICSESS 79  
      ::::|:||:| | :||| ||::| | :||| | :||  
Db    26 NIEVKTYNRNPKTATWD-----KIEGVHYTDLDELKKPELIQTISTQS 74  
  
QY    80 HEDIROFLAGKHVLVEYPMTLSAAQAQLWELAEOQG 118  
      ||| : ||||| | : ||||| : | :||||| :|  
Db    75 HFDAKVAVLENGKNLVKEPFMMITYAKEIFELAKERG 113
```

```
Search completed: November 1, 2002, 14:50:54  
Job time : 33.575 secs
```

GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd.

OM protein - protein search, using sw model

Run On: November 1, 2002, 14:44:48 ; Search time 24.746 Seconds
(without alignments)
292.168 Million cell updates/sec

Title: us-09-606-129a-1

Perfect score: 1508

Sequence: 1 MNAEPERKFGVVVGVGRAG.....RILHCLGLAEIOKYCCSRK 296

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues .

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued_Patents_AA:*

1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*

2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*

3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*

4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*

5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*

6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	124.5	8.3	315	4	US-09-720-817-3
2	124.5	8.3	315	4	US-09-720-817-6
3	122.5	8.1	280	4	US-09-720-817-1
4	108	7.2	229	4	US-08-936-165A-519
5	107	7.1	332	4	US-09-036-987A-15
6	107	7.1	332	4	US-09-370-700-15
7	98	6.5	988	2	US-08-286-819A-19
8	98	6.5	988	2	US-08-980-357-19
9	90.5	6.0	351	1	US-08-402-217A-2
10	90.5	6.0	351	1	US-08-700-178-2
11	90.5	6.0	351	3	US-08-995-654-2
12	88	5.8	551	3	US-08-886-886-15
13	87	5.8	264	2	US-07-857-224B-9
14	86	5.7	759	1	US-08-676-967-1
15	86	5.7	759	1	US-08-676-974-1
16	86	5.7	759	2	US-09-098-487-1
17	84	5.6	487	2	US-08-712-709-8
18	84	5.6	487	3	US-09-111-444-8
19	84	5.6	487	4	US-09-541-228-8
20	83.5	5.5	514	2	US-08-960-022-14
21	82	5.4	270	2	US-08-852-743-5
22	82	5.4	270	3	US-09-185-370-5
23	82	5.4	451	2	US-08-372-652-2
24	82	5.4	451	5	PCT-US95-16311-2
25	82	5.4	484	2	US-08-372-652-1
26	82	5.4	484	5	PCT-US95-16311-1
27	82	5.4	1205	4	US-09-330-330-1

28	81.5	5.4	323	1	US-07-992-827D-1	Sequence 1, Appli
29	81.5	5.4	323	1	US-08-216-593-1	Sequence 1, Appli
30	81.5	5.4	323	5	PCT-US93-12380-1	Sequence 1, Appli
31	81.5	5.4	988	3	US-08-851-843A-69	Sequence 69, Appli
32	81.5	5.4	988	4	US-08-974-349A-112	Sequence 112, App
33	81.5	5.4	988	4	US-08-854-050-69	Sequence 69, Appli
34	81.5	5.4	988	4	US-09-430-323-69	Sequence 69, Appli
35	81	5.4	1261	3	US-09-080-855-2	Sequence 2, Appli
36	80.5	5.3	539	3	US-08-557-210A-5	Sequence 5, Appli
37	80.5	5.3	1057	4	US-09-541-782-10	Sequence 10, Appli
38	80.5	5.3	1073	4	US-09-541-782-6	Sequence 6, Appli
39	80	5.3	472	1	US-08-496-631-2	Sequence 2, Appli
40	80	5.3	2930	4	US-09-417-822-2	Sequence 2, Appli
41	79.5	5.3	516	4	US-09-147-009-2	Sequence 2, Appli
42	79.5	5.3	835	4	US-09-291-839-2	Sequence 2, Appli
43	79	5.2	333	4	US-08-960-780-44	Sequence 44, Appli
44	79	5.2	333	4	US-09-073-898-44	Sequence 44, Appli
45	79	5.2	524	3	US-08-557-210A-3	Sequence 3, Appli

ALIGNMENTS

RESULT 1
US-09-720-817-3
; Sequence 3, Application US/09720817
; Patent No. 6340579
; GENERAL INFORMATION:
; APPLICANT: Masai, Eiiji
; APPLICANT: Fukuda, Masao
; APPLICANT: Katayama, Yoshihiro
; APPLICANT: Nishikawa, Seiji
; APPLICANT: Hotta, Ysushi
; TITLE OF INVENTION: NOVEL GENE AND TRANSFORMANT CARRYING THE SAME
; FILE REFERENCE: 20096650XOPT
; CURRENT APPLICATION NUMBER: US/09720.817
; CURRENT FILING DATE: 2001-06-04
; PRIOR APPLICATION NUMBER: JAPAN 10/203200
; PRIOR FILING DATE: 1998-07-17
; PRIOR APPLICATION NUMBER: PCT/JP99/03410
; PRIOR FILING DATE: 1999-06-25
; NUMBER OF SEQ ID NOS: 10
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 3
; LENGTH: 315
; TYPE: PRT
; ORGANISM: Sphingomonas sp. CR-0310201
US-09-720-817-3

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Best Local Similarity	20.4%	Pred. No. 7.2e-05		
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Indels	51	Gaps	10	
Qy	11	VVVGVGRAGSRMRDLRNPSSAFNLIGFVSRR-----ELGSDIGVQQ--ISLEDAL	63	
Db	3	IALAGAGAFGEKHLDLGNIDG---VEIVSIISRKAQAEVAAKYGAKHSGTDLSEAL	58	
Qy	64	SSQVEVAYICESSESSBEDYIRQFLNAGKHLVVEYPMTSLSLAAQELWELAEQKGLVHE	123	
Db	59	ARDDVDVILCTPTQMHAEQAIALACNAGKHVQVEIPLADSNWADAEAVMKKSOETGLVCMV	118	
Qy	124	EHVELLMEEFAFLKEVGVKDL-----LKGS-----LLFTSDPLE	158	
Db	119	GHTRRFNFSHOYIHNKIVAGELAIQOMDVQTYFFRRKNNMNAKGEPRSWTDHLLMHAHAHT	178	
Qy	159	EDRFQFPAFSGISRLTSLVSLFGELSLVSATLEERKEQDKMKTVCLETETKKSPLS----	214	
Db	179	VDLFAYQAGKIVQANAVOGPIHPGLGIAMDSIQKSETGAICTLSLNFNDGPIGTFFR	238	
Qy	215	WIEEKGPGLKRNRYLSFHFKSGSLE--NVPNVGVNKN--IFLKDQNIYFVKLLGQFSEKEL	271	
Db	239	YICDNGTWTIARYDDL-----VTGKEPVDVSKVDVSMNGIELQDREFIAAIREGPREPSSV	294	


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Matches 64; Conservative 42; Mismatches 110; Indels 74; Gaps 13;

Qy 1 MNAEPERKGVVGVVGVGRAGSVRMDLRN-----PHPSAFLNLIGFVSRRELQ 49
Db 144 LEKQPKR---AVIVGAGFLEMAENLKRGLVNVIEQAPH-----ILP 185

Qy 50 SIDGVQOISLEDAISSQVEVAYTCSSSHSHEDYIROFLNAGKHVLYEYPMTL----- 102
Db 186 TLDEMAAFIEKELSHOGVEVI-----TSHA--VAGFEDHGKRLRLDDGRITPADLVIL 237

Qy 103 -----SLAAQELWELABQKVLHEEHVELLMEEFA-----FLKKEVVGVKDLKGS 149
Db 238 SIGVRPNQLAVTAGI-ELGTRGILVDERYQTNIPOIYAVGDALVYKQQTIGKDAL---- 293

Qy 150 LLFTSDPLEEDRFGFPFAGSISRL-----TWLSLFGELSLVSATLEERKEDQYMKMTV 203
Db 294 ISLASPANRQCRQVADTISGISRRNOGGIGTAIIRTFG-MTAASGTLSERTAKENELSF 352

Qy 204 CLETEKKSPLSWIEKGPCLRNRYLSPHFKSGSLENVNV---GVNKN 250
Db 353 VIHVGKDHASYYPEATDILLK---LIFHPETGEIYGAQGVGAKGVDRRI 399

RESULT 13
US-07-857-224B-9
; Sequence 9, Application US/07857224B
; Patent No. 5958784
; GENERAL INFORMATION:
; APPLICANT: Benner, Steven A.
; TITLE OF INVENTION: Predicting Folded Structures of Proteins
; NUMBER OF SEQUENCES: 114
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Steven A. Benner
; STREET: Hadlaubstrasse 151
; CITY: Zurich
; STATE: none
; COUNTRY: Switzerland
; ZIP: (note: this is an international post code) CH-8092
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch diskette, 1.4 Mb storage
; COMPUTER: Apple Macintosh
; OPERATING SYSTEM: Macintosh 7.0
; SOFTWARE: Microsoft Word
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/857,224B
; FILING DATE: 03/25/92
; CLASSIFICATION: 436
; PRIOR APPLICATION DATA: none
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (International) 41 1 632 2830
; TELEFAX: (International) 41 1 262 2437
; TELEX: none
; INFORMATION FOR SEQ ID NO: 9:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 264.
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE:
; DESCRIPTION: protein
; ORIGINAL SOURCE:
; ORGANISM: bovine
; FEATURE: protein kinase; Table 8 Column 9
; PUBLICATION INFORMATION:
; AUTHORS: Hanks, S. K.
; AUTHORS: Quinn, A. M.
; AUTHORS: Hunter, T.
; TITLE: The protein kinase family
; JOURNAL: Science
; VOLUME: 241
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; PAGES: 42-52
; DATE: 1988
US-07-857-224B-9

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Matches 39; Conservative 33; Mismatches 73; Indels 34; Gaps 10;

Qy 9 FGVV-VVGVGRAGSVRMDLRNPHPSAFLNLIGFVSRRELGSIDGVQOISLEDAISSQE 67
Db 3 FNIIDTLGVGGFGRVQLKSESKTFAMKIL---KKRHI--VDTROQ---EHIRSEKQ 54

Qy 68 VEVAYTCSSSHSHEDYIROFLNAGKHVLYEYPMTLSLAAQELWELABQKGVLYHEE--- 124
Db 55 I-----MQAHSDFIVRLYRTFKDSKLY-MLMEACLGELWLTILDRGSEFEDSTTRF 106

Qy 125 HVELLMEEFAEL-KKEVVGVKDLKGLLSLTSDPLEEDR-----FGPAFSGISRLTW 175
Db 107 YTACVVEAFAYLHSGIIIRDLKPNLIL-----DHRGYAKLVDFGFPAKKIGFGKLTW 159

RESULT 14
US-08-676-967-1
; Sequence 1, Application US/08676967
; Patent No. 5747317
; GENERAL INFORMATION:
; APPLICANT: COLLINS, KATHLEEN
; TITLE OF INVENTION: Human Telomerase
; NUMBER OF SEQUENCES: 10
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Science & Technology Law Group
; STREET: 268 Bush Street, Suite 3200
; CITY: San Francisco
; STATE: CA
; COUNTRY: USA
; ZIP: 94104
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/676,967
; FILING DATE:
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Osman Ph.D., Richard A
; REGISTRATION NUMBER: 36,627
; REFERENCE/DOCKET NUMBER: UCB96-055
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415)343-4341
; TELEFAX: (415)343-4342
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 759 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: not relevant
; MOLECULE TYPE: peptide
US-08-676-967-1

Query Match          5.7%; Score 86; DB 1; Length 759;
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Qy 22 VRMRDLRNPSPSSAFLNLIGFVSRRELGSIDGVQOISLEDAISSQVEVAYTCSSSSHE 81
Db 267 IQKRAVKRPAPAKSSDSEEDSDLEESDIDGELAQSDTSTEQEDKAVOVSNKKRKR 326

Qy 82 DYIROFLNAGKHVLYEYPMTLSL-AAAQELWELABQKGVK-----VLHEEHVELLMEEFA 134
Db 327 --LPSDVNEGKTVFIR---NLSFDSEEEELGELLOQFGLKYLVRIVLHPDTEHSGKCAFA 381
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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:40:53 ; Search time 67.0997 Seconds
(without alignments)
489.985 Million cell updates/sec

Title: US-09-606-129A-1
Perfect score: 1508
Sequence: 1 MNAEPERKFGVVVGVGRAG.....RILHCLGLAEIKYCCSRK 296

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues
Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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22: /SIDSL1/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	225	14.9	60	21 AAG02024	Human secreted pro
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3	152.5	10.1	434	22 ABG21584	Novel human diagno
4	148	9.8	241	22 ABG21582	Novel human diagno
5	148	9.8	389	22 ABG29497	Novel human diagno
6	129	8.6	335	22 ABG60024	Drosophila melanog
7	124.5	8.3	315	21 AAU68460	Sphingomonas sp. C
8	122.5	8.1	226	22 AAU49252	Propionibacterium
9	122.5	8.1	280	21 AAU68459	Sphingomonas sp. C
10	121.5	8.1	175	18 AAW28328	Amino acid sequenc
11	120.5	8.0	337	22 AAG92054	C glutamicum prote

12	120.5	8.0	337	22 AAB79386	Corynebacterium gl
13	119.5	7.9	346	22 AAU36865	Staphylococcus aur
14	119	7.9	341	22 AAB96416	Putative P. abyss
15	116.5	7.7	341	22 AAU34111	Staphylococcus aur
16	110	7.3	357	22 AAU34110	Staphylococcus aur
17	110	7.3	359	22 AAU36864	Staphylococcus aur
18	108	7.2	229	19 AAU77759	Glucose-fructose o
19	108	7.2	329	22 AAU00480	Streptomyces galli
20	108	7.2	344	22 AAU04826	Micromonospora eve
21	107	7.1	332	22 AAU39310	SpnN protein invol
22	107	7.1	336	22 AAB70956	S. spinosa protein
23	106.5	7.1	315	22 AAB96316	Putative P. abyss
24	106.5	7.1	344	22 AAU43141	Propionibacterium
25	105.5	7.0	307	22 AAG98892	E. coli growth and
26	105	7.0	327	22 AAU03634	Group B Streptococ
27	102	6.8	753	22 ABG20518	Novel human diagno
28	100.5	6.7	1316	22 AAG81126	Mycobacterium tube
29	98.5	6.5	702	22 AAU49114	Propionibacterium
30	97.5	6.5	413	22 AAU56511	Propionibacterium
31	97	6.4	219	19 AAW98401	H. pylori GHPO 138
32	97	6.4	988	13 AAR24302	Transposase from g
33	96	6.4	424	21 AAB43883	Human cancer assoc
34	96	6.4	1374	22 AAB69070	Human male enhance
35	95	6.3	359	22 AAG93130	C glutamicum prote
36	95	6.3	359	22 AAB79395	Corynebacterium gl
37	94	6.2	417	22 ABB67972	Drosophila melanog
38	93	6.2	623	22 AAU37906	Streptococcus pneu
39	92.5	6.1	867	22 AAB96297	Putative P. abyss
40	91	6.0	337	22 AAG89930	C glutamicum prote
41	90.5	6.0	237	22 ABG24349	Novel human diagno
42	90.5	6.0	341	22 AAG89934	C glutamicum prote
43	90.5	6.0	341	22 AAB79394	Corynebacterium gl
44	90.5	6.0	351	17 AAU01052	Human umbilical ve
45	90.5	6.0	433	22 AAU34397	Staphylococcus aur

ALIGNMENTS

RESULT 1
AAG02024
ID AAG02024 standard; Protein: 60 AA.
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AC AAG02024;
XX
DT 06-OCT-2000 (first entry)
XX
DE Human secreted protein, SEQ ID NO: 6105.
XX
KW Human; 5' EST; expressed sequence tag; secreted protein; cDNA isolation;
KW gene therapy; chromosome mapping.
XX
OS Homo sapiens.
PN
PN EP1033401-A2.
PD
PD 06-SEP-2000.
XX
PF 21-FEB-2000; 2000EP-0200610.
XX
PR 26-FEB-1999; 99US-0122487.
XX
XX (GBST) GENSET.
XX
PI Dumas Milne Edwards J, Duclert A, Giordano J;
XX
XX WPI: 2000-500381/45.
DR N-PSDB; AAC02030.
XX
XX New nucleic acid that is a 5' expressed sequence tag (5' EST) for
PT obtaining cDNAs and genomic DNAs that correspond to 5' ESTs and for
PT diagnostic, forensic, gene therapy and chromosome mapping procedures -
XX

PS Claim 13; SEQ ID 6105; 71pp + CD-ROM; English.

CC The present sequence is a polypeptide encoded by one of a large number
CC of 5' ESTs derived from mRNAs encoding secreted proteins. The 5' ESTs
CC were prepared from total human RNAs or polyA+ RNAs derived from 30
CC different tissues. EST sequences usually correspond mainly to the 3'
CC untranslated region (UTR) of the mRNA because they are often obtained
CC from oligo-dT primed cDNA libraries. Such ESTs are not well suited for
CC isolating cDNA sequences derived from the 5' ends of mRNAs and even in
CC those cases where longer cDNA sequences have been obtained, the full 5'
CC UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5'
CC ends and can therefore be used to obtain full length cDNAs and genomic
CC DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and
CC chromosome mapping procedures. They are used to obtain upstream
CC regulatory sequences and to design expression and secretion vectors.

XX Sequence 60 AA;

Query Match 14.9%; Score 225; DB 21; Length 60;
Best Local Similarity 97.9%; Pred. No. 2.2e-14;
Matches 46; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 24 MRDLRNPSPSAFLNLIGFVSRRELGSIDGVQQTSLDALSSQVEV 70
|||||
DB 1 MRDLRNPSPSAFLNLXGFSRRELGSIDGVQQTSLDALSSQVEV 47

RESULT 2

AG02023
ID AAG02023 standard; Protein; 63 AA.

XX AAG02023;

XX 06-OCT-2000 (first entry)

XX Human secreted protein, SEQ ID NO: 6104.

XX Human; 5' EST; expressed sequence tag; secreted protein; cDNA isolation;
KW gene therapy; chromosome mapping.

XX Homo sapiens.

XX EP1033401-A2.

XX 06-SEP-2000.

XX 21-FEB-2000; 2000EP-0200610.

XX 26-FEB-1999; 99US-0122487.

XX (GEST) GENSET.

XX Dumas Milne Edwards J, Duclert A, Giordano J;

XX WPI; 2000-500381/45.

DR N-PSDB; AAC02029.

XX New nucleic acid that is a 5' expressed sequence tag (5' EST) for
PT obtaining cDNAs and genomic DNAs that correspond to 5'ESTs and for
PT diagnostic, forensic, gene therapy and chromosome mapping procedures -
XX Claim 13; SEQ ID 6104; 71pp + CD-ROM; English.

XX The present sequence is a polypeptide encoded by one of a large number
CC of 5' ESTs derived from mRNAs encoding secreted proteins. The 5' ESTs
CC were prepared from total human RNAs or polyA+ RNAs derived from 30
CC different tissues. EST sequences usually correspond mainly to the 3'
CC untranslated region (UTR) of the mRNA because they are often obtained
CC from oligo-dT primed cDNA libraries. Such ESTs are not well suited for
CC isolating cDNA sequences derived from the 5' ends of mRNAs and even in
CC those cases where longer cDNA sequences have been obtained, the full 5'
CC ends and can therefore be used to obtain full length cDNAs and genomic

CC DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and
CC chromosome mapping procedures. They are used to obtain upstream
CC regulatory sequences and to design expression and secretion vectors.

XX Sequence 63 AA;

Query Match 12.3%; Score 186; DB 21; Length 63;
Best Local Similarity 94.9%; Pred. No. 1.4e-10;
Matches 37; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 MNAEPERKFGVVVGVGRAGSVRMRDLRNPSPSAFLNL 39
|||||
DB 1 MNAEPERKFGVVVGVGRAGSVRMRDLRNPSPSAFLNL 39

RESULT 3

ABG21584

ID ABG21584 standard; Protein; 434 AA.

XX ABG21584;

XX 18-FEB-2002 (first entry)

XX Novel human diagnostic protein #21575.

XX Human; chromosome mapping; gene mapping; gene therapy; forensic;
KW food supplement; medical imaging; diagnostic; genetic disorder.

XX Homo sapiens.

XX WO200175067-A2.

XX 11-OCT-2001.

XX 30-MAR-2001; 2001WO-US08631.

XX 31-MAR-2000; 2000US-0540217.

XX 23-AUG-2000; 2000US-0649167.

XX (HYSE-) HYSEQ INC.

XX Drmanac RT, Liu C, Tang YT;

XX WPI; 2001-639362/73.

XX N-PSDB; AAS85771.

XX New isolated polynucleotide and encoded polypeptides, useful in
PT diagnostics, forensics, gene mapping, identification of mutations
PT responsible for genetic disorders or other traits and to assess
PT biodiversity -

XX Claim 20; SEQ ID NO 51943; 103pp; English.

XX The invention relates to isolated polynucleotide (I) and
CC polypeptide (II) sequences. (I) is useful as hybridisation probes,
CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome
CC and gene mapping, and in recombinant production of (II). The
CC polynucleotides are also used in diagnostics as expressed sequence tags
CC for identifying expressed genes. (I) is useful in gene therapy techniques
CC to restore normal activity of (II) or to treat disease states involving
CC (II). (II) is useful for generating antibodies against it, detecting or
CC quantitating a polypeptide in tissue, as molecular weight markers and as
CC a food supplement. (II) and its binding partners are useful in medical
CC imaging of sites expressing (II). (I) and (II) are useful for treating
CC disorders involving aberrant protein expression or biological activity.
CC The polypeptide and polynucleotide sequences have applications in
CC diagnostics, forensics, gene mapping, identification of mutations
CC responsible for genetic disorders or other traits to assess biodiversity
CC and to produce other types of data and products dependent on DNA and
CC amino acid sequences. ABG00010-ABG30377 represent novel human
CC diagnostic amino acid sequences of the invention.

CC Note: The sequence data for this patent did not appear in the printed
CC specification, but was obtained in electronic format directly from WIPO

CC quantitating a polypeptide in tissue, as molecular weight markers and as
CC a food supplement. (II) and its binding partners are useful in medical
CC imaging of sites expressing (II). (I) and (II) are useful for treating
CC disorders involving aberrant protein expression or biological activity.
CC The polypeptide and polynucleotide sequences have applications in
CC diagnostics, forensics, gene mapping, identification of mutations
CC responsible for genetic disorders or other traits to assess biodiversity
CC and to produce other types of data and products dependent on DNA and
CC amino acid sequences. ABG00010-ABC030377 represent novel human
CC diagnostic amino acid sequences of the invention.
CC Note: The sequence data for this patent did not appear in the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX Sequence 389 AA;

Query Match 9.8%; Score 148; DB 22; Length 389;
Best Local Similarity 29.9%; Pred. No. 8.3e-06;
Matches 43; Conservative 28; Mismatches 53; Indels 20; Gaps 4;

QY 59 LEDALSSQEVAVYICSSSHSHEDYIROFLNAGKHVLYEYPMTLISLAAQELWELAEQKG 118

Db 222 LDEVNDPDKLVVYVCHADSHFEYAKRALEAGNVLVEKFTPTLAAQKELFALAKSGK 281

QY 119 KVLHEERVELLMEEFAFLKKEVWGKDLKGLSLETS-----PLEEDRFQFP---AFSG 169

Db 282 LTVTPYQNRFRDSCFLTAKKAIESGKL--GEIVEVESHFYIRPVAETKPLQDGFAYG 339

QY 170 ISRL-----TWLVSLFCELS 184

Db 340 LGALFTNQGGFFKSLLSIFADSS 363

RESULT 6

ABB60024
ID ABB60024 standard; Protein; 335 AA.

XX ABB60024;

XX 26-MAR-2002 (first entry)

DE Drosophila melanogaster polypeptide SEQ ID NO 6864.

XX Drosophila; developmental biology; cell signalling; insecticide;
KW pharmaceutical.

XX Drosophila melanogaster.

OS WO200171042-A2.

XX 27-SEP-2001.

XX 23-MAR-2001; 2001WO-US09231.

XX 23-MAR-2000; 2000US-191637P.

PR 11-JUL-2000; 2000US-0614150.

XX (PEKE) PE CORP NY.

XX Venter JC, Adams M, Li PWD, Myers EW;

DR WPI; 2001-656860/75.

DR N-PSDB; ABL04127.

XX New isolated nucleic acid detection reagent for detecting 1000 or more
PT genes from Drosophila and for elucidating cell signalling and cell-cell
PT interactions -

XX Disclosure; SEQ ID NO 6864; 21pp + Sequence Listing; English.

XX The invention relates to an isolated nucleic acid detection reagent
CC capable of detecting 1000 or more genes from Drosophila. The invention is
CC useful in developmental biology and in elucidating cell signalling and

CC cell-cell interactions in higher eukaryotes for the development of
CC insecticides, therapeutics and pharmaceutical drugs. The invention
CC discloses genomic DNA sequences (AB116176-ABL30511), expressed DNA
CC sequences (ABL01840-ABL16175) and the encoded proteins
CC (ABB57737-ABB72072).

CC The sequence data for this patent did not form part of the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX Sequence 335 AA;

Query Match 8.6%; Score 129; DB 22; Length 335;
Best Local Similarity 27.7%; Pred. No. 0.00047;
Matches 44; Conservative 28; Mismatches 62; Indels 25; Gaps 6;

QY 1 MNABPERKFGVVVVG-----VGRAGSVYMRDLRNPSPSSAFNLNIG-----FYSRREL- 48

Db 1 MQSOANLWNGIAAAGRITQDFVTALGTVE----KSRHVVAADVVDGQRAQOFAORNOIP 56

QY 49 GSIDGVQOISLEDALSSQEVAVYICSSSHSHEDYIROFLNAGKHVLYEYPMTLISLAAQ 108

Db 57 RHYGFDALAD-----REVVEVYVGTINPFIYAVVHMLARGKNVICETPMCLSVQAK 111

QY 109 ELWELAEQKGKVLHEERVELLMEEF-----AFLKKEVWGK 143

Db 112 ELYTLAEQRGVFLMEGMWSRFFPSYDRLRELKNDVIGE 150

RESULT 7

AAAY68460
ID AAY68460 standard; Protein; 315 AA.

XX AAY68460;

XX 20-APR-2000 (first entry)

DE Sphingomonas sp. CR-0310201 CHMSD SEQ ID NO:3.

KW Alpha-hydroxy-gamma-carboxymuconic acid-eta-semialdehyde dehydrogenase;
KW 2-pyrone-4,6-dicarboxylic acid; 3,4-dihydroxybenzoic acid.

OS Sphingomonas sp.

XX WO200004134-A1.

XX 27-JAN-2000.

XX 25-JUN-1999; 99WO-JP03410.

XX 17-JUL-1998; 98JP-0203200.

XX (MAZN) COSMO RES INST.

XX (MAZN) COSMO OIL CO LTD.

XX Masai E, Fukuda M, Katayama Y, Nishikawa S, Hotta Y;

XX WPI; 2000-147784/13.

DR N-PSDB; AAZ88148, AAZ88151.

XX New alpha-hydroxy-gamma-carboxymuconic acid eta-semialdehyde
PT dehydrogenase for industrial production of 2-pyrone-4,6-dicarboxylic
PT acid -

XX Claim 1; Page 26-27; 34pp; Japanese.

XX The present sequence represents an alpha-hydroxy-gamma-carboxymuconic
CC acid-eta-semialdehyde dehydrogenase (CHMSD) originating in
CC Sphingomonas sp. CR-0310201. CHMSD can be used in the production of
CC 2-pyrone-4,6-dicarboxylic acid by culture of a transformant comprising
CC CHMSD in the presence of a suitable precursor such as
CC 3,4-dihydroxybenzoic acid (which is converted in situ into
CC alpha-hydroxy-gamma-carboxymuconic acid-eta-semialdehyde).

```
SQ Sequence 315 AA;
Query Match 8.3%; Score 124.5; DB 21; Length 315;
Best Local Similarity 20.4%; Pred. No. 0.0012;
Matches 65; Conservative 55; Mismatches 147; Indels 51; Gaps 10;

Qy 11 VVVGVGRAGSVRMRLRNPHPSAFNLIGFVSR-----ELGSDGVQV--ISLEDA 63
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 3 IALAGAGAFGEKHLGDKNIDG---VEIVSTIIRKAEQAEEAAKYCAKHSGLDSEAL 58
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 64 SSQVEVAYICSESSSHEDYIROFLNAGKHVLYVEYPTWLSLAAAGELWELAEQKGVLHE 123
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 59 ARDDVDAVILCTPTQMAEQIAQACNAGKHVQVEIPLADSWADAEAVNMKKSQETGLVCWV 118
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 124 EHVLEMEFAFLKVEVVGKDL-----LKGS-----LLFTSDPLE 158
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 119 GHTRRPNSHOYIHNKIVAGELAIQMDVQYFFRRKNNNAKGEPRSWTDHLLHHAHT 178
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 159 EDRGFPAPFSGISRLTWLVSLFGLSLVSATLEERKEDQYKMWVCLTEKKSPLS----- 214
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 179 VDLFAYQAGKIVQANAVQGPVHPGLGIAAMDMSIQLKSETGAICTLSLSFNNDGPIGTFFR 238
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 215 WIEKGGCLKKNRYLSFRFKSGSLE--NVPNVGVNKN-IFLKDQNIQVQKLLIGOFSEKEL 271
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 239 YICONGTWIARYDDL-----VTGKEEPVDVSKVDVSMNGIELQDREFFIAIREGREPNSSV 294
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 272 AAERKRLHLCLGLAEIIQ 289
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 295 A----RVLDYRVLGELE 308
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :

RESULT 8
AAU49252
ID AAU49252 standard; Protein: 226 AA.
AC AAU49252;
XX
XX
XX 27-FEB-2002 (first entry)
XX
XX
XX Propionibacterium acnes immunogenic protein #10148.
XX
XX SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis;
XX uveitis; endophthalmitis; bone; joint; central nervous system; ELISA;
XX inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay;
XX dermatological; osteopathic; neuroprotectant.
XX
XX Propionibacterium acnes.
XX
XX WO200181581-A2.
XX
XX
XX 01-NOV-2001.
XX
XX 20-APR-2001; 2001WO-US12865.
XX
XX 21-APR-2000; 2000US-199047P.
XX PR 02-JUN-2000; 2000US-208841P.
XX PR 07-JUL-2000; 2000US-216747P.
XX
XX (CORI-) CORIXA CORP.
XX
XX Skeiky YAW, Persing DH, Mitcham JL, Wang SS, Bhatia A;
XX L'maisonneuve J, Zhang Y, Jen S, Carter D;
XX
XX WPI: 2001-616774/71.
XX DR N-PSDB; AAS59545.
XX
XX Propionibacterium acnes polypeptides and nucleic acids useful for
XX vaccinating against and diagnosing infections, especially useful for
XX treating acne vulgaris.
XX
XX Claim 6; SEQ ID No 10447; 1069pp; English.
XX FS
XX Sequences AAU39105-AAU68017 represent Propionibacterium acnes immunogenic
CC
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CC polypeptides. The proteins and their associated DNA sequences are used in
CC the treatment, prevention and diagnosis of medical conditions caused by
CC P. acnes. The disorders include SAPHO syndrome (synovitis, acne,
CC pustulosis, hypertosis and osteomyelitis), uveitis and endophthalmitis.
CC P. acnes is also involved in infections of bone, joints and the central
CC nervous system, however it is particularly involved in the inflammatory
CC lesions associated with acne vulgaris. A method for detecting the
CC presence or absence of P. acnes in a patient comprises contacting a
CC sample with a binding agent that binds to the proteins of the invention
CC and determining the amount of bound protein in the sample. The
CC polypeptides may be used as antigens in the production of antibodies
CC specific for P. acnes proteins. These antibodies can be used to
CC downregulate expression and activity of P. acnes polypeptides and
CC therefore treat P. acnes infections. The antibodies may also be used as
CC diagnostic agents for determining P. acnes presence, for example, by
CC enzyme linked immunosorbent assay (ELISA).
CC Note: The sequence data for this patent did not form part of the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.
CC
XX
XX SQ Sequence 226 AA;
Query Match 8.1%; Score 122.5; DB 22; Length 226;
Best Local Similarity 23.9%; Pred. No. 0.0012;
Matches 48; Conservative 21; Mismatches 79; Indels 53; Gaps 4;

Qy 13 VVGVGRAGSVRMRLRNPHPSAFNLIGFVSRRELSTGQVQVQISLEDAISSQVEVA- 71
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 23 MVGIGSMGKNHVRNL-----AIDGVDLVAIADASKDPFGVAG 61
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 72 -----YICSESSSHEDYIROFLNAGKHVLYVEYPTWLSLAAAGELWE 112
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 62 DLPVLPDVAIVETGIDYCVVAAPTKEEIGLKLAEAGVHALIEKPLAYDTAAATRLAE 121
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 113 LAEQKGVHHEHVLELMEFAFLKVEVVGKDLKGLLFTSDPLEEDRFPGFSGISR 172
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 122 AFESKGLVGAVGHTERFNPALOSLRKRLNGDL--GDLYQVATRRQ-----GHSR 169
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Qy 173 LTWLVSFLGELSLVSATLEER 193
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 170 PVSLSALSRLSLATLTSR 190
   : : : : : : : : : : : : : : : : : : : : : : : : : : : :

RESULT 9
AAU68459
ID AAY68459 standard; Protein: 280 AA.
AC AAY68459;
XX
XX
XX 20-APR-2000 (first entry)
XX
XX Sphingomonas sp. CR-0310201 CHMSD SEQ ID NO:1.
XX
XX Alpha-hydroxy-gamma-carboxymuconic acid-eta-semialdehyde dehydrogenase;
XX 2-pyrone-4,6-dicarboxylic acid; 3,4-dihydroxybenzoic acid.
XX
XX Sphingomonas sp.
XX
XX WO2000004134-A1.
XX
XX 27-JAN-2000.
XX
XX 25-JUN-1999; 99WO-JP03410.
XX
XX 17-JUL-1998; 98JP-0203200.
XX
XX (MAZN ) COSMO RES INST.
XX PA (MAZN ) COSMO OIL CO LTD.
XX
XX Masai E, Fukuda M, Katayama Y, Nishikawa S, Hotta Y;
XX WPI: 2000-147784/13.
XX DR N-PSDB; AAZ88147.
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XX PT New alpha-hydroxy-gamma-carboxymuconic acid eta-semialdehyde
XX PT dehydrogenase for industrial production of 2-pyrone-4,6-dicarboxylic
XX PT acid
XX PS Claim 1; Page 23-25; 34pp; Japanese.
XX CC The present sequence represents an alpha-hydroxy-gamma-carboxymuconic
XX CC acid-eta-semialdehyde dehydrogenase (CHMSD) originating in
XX CC Shingomonas sp. CR-0310201. CHMSD can be used in the production of
XX CC 2-pyrone-4,6-dicarboxylic acid by culture of a transformant comprising
XX CC CHMSD in the presence of a suitable precursor such as
XX CC 3,4-dihydroxybenzoic acid (which is converted in situ into
XX CC alpha-hydroxy-gamma-carboxymuconic acid-eta-semialdehyde).
XX SQ Sequence 280 AA;
Query Match 8.1%; Score 122.5; DB 21; Length 280;
Best Local Similarity 22.5%; Pred. No. 0.0016;
Matches 32; Conservative 33; Mismatches 66; Indels 11; Gaps 3;
QY 11 VVVVGVRAGSVRMRDLRNPSPSAFLNLIGFVSRR-----ELGSDGVQV--ISLEDAL 63
DB 3 IALAGAGAFGEKHLGDKNIDG---VEIVSIIRKAEQAAEVAAYKAGKHSHTDLSEAL 58
QY 64 SSQEVVAYICSESSSHEDYIROFLNAGKHVLYEYPMTLSLAAQELWELAEQKGVILHE 123
DB 59 ARDDVDVILCTPQMHAEQAIAICMKNAGKHVQVEIPLADSWADAEAVMKKSQETGLVCMV 118
QY 124 EHVLLMEEFAPLKKVGVGKDL 145
DB 119 GHTRRFNPSHOYIHNKIVAGEL 140
RESULT 10
ID AAW28328
AC AAW28328;
XX DT 01-SEP-1998 (first entry)
XX DE Amino acid sequence of glucose-fructose oxidoreductase precursor.
XX KW Staphylococcus aureus protein; ribozyme; antisense sequence; control;
XX KW Staphylococcal gene; regulatory element; bacterial gene expression;
XX KW vaccine; Staphylococcal infection; food poisoning; scaled skin syndrome;
XX KW toxic shock syndrome.
XX OS Staphylococcus aureus.
XX FH Key Location/Qualifiers
XX FT Misc-difference 1..175 /note= "residues designated X are not defined in
XX FT the specification"
XX PN WO9730070-A1.
XX PD 21-AUG-1997.
XX PF 19-FEB-1997; 97WO-US02318.
XX PR 20-FEB-1996; 96US-0011888.
XX PA (SMIK ) SMITHKLINE BEECHAM CORP.
XX PI Black MT, Burnham MK, Hodgson JE, Knowles DJC, Nicholas RO;
XX PI Pratt JM, Reichard RW, Rosenberg M, Ward JM;
XX DR WPI; 1997-424969/39.
XX DR N-PSDB; AAT84223.
XX PT Novel polypeptide(s) from Staphylococcus aureus strain WCUH29 - used

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```

PT to isolate antimicrobial compounds, and in vaccines against S.
PT aureus infection
XX PS Claim 6; Page 610; 989pp; English.
XX CC The present sequence represents a Staphylococcus aureus protein, that,
XX CC based on homology with a zymomonas sp. protein, is believed to be a
XX CC glucose-fructose oxidoreductase precursor. The DNA sequence was isolated
XX CC from a library of clones of S. aureus WCUH 29 in Escherichia coli. The
XX CC DNA sequence can be used in the construction of ribozymes and antisense
XX CC sequences to control the expression of Staphylococcal genes. The DNA
XX CC sequence is also useful as a source of regulatory elements for the
XX CC control of bacterial gene expression. The present protein may be used
XX CC to produce vaccines to enable a host to produce specific antibodies
XX CC with antibacterial action. These vaccines and antibodies would protect
XX CC a host against invasion by S. aureus, and conditions relating to
XX CC Staphylococcal infection, e.g. Staphylococcal food poisoning, scaled
XX CC skin syndrome, and toxic shock syndrome.
XX SQ Sequence 175 AA;
Query Match 8.1%; Score 121.5; DB 18; Length 175;
Best Local Similarity 27.9%; Pred. No. 0.001;
Matches 43; Conservative 22; Mismatches 66; Indels 23; Gaps 4;
QY 8 KFGVVVGVRAGSVRMRDLRNPSPSAFLNLIGFVSRRRLGSDGVQVQISLEDALSSQE 67
DB 3 KLVGVGVIGV--GLAQRH-----PALLKLDVSLVAVQDINTVQMIDVAKRFNIPQ 54
QY 68 -----VEVAYICSESSSHEDYIROFLNAGKHVLYEYPMTLSLAAQELWELAEQ 116
DB 55 AVETPSELFKLVDVAVICTPNKPHADLSIEALNHGVHVLCEKPMXMTTECDRMIEAANK 114
QY 117 KGKVL----HEHVLLMEEFAPLKKVGVGKDLL 146
DB 115 NKKLLTVAYHYRHTDVAMTAKKAIEAGVVGKPLV 148
RESULT 11
ID AAG92054
AC AAG92054 standard; Protein; 337 AA.
XX DT 26-SEP-2001 (first entry)
XX DE C glutamicum protein fragment SEQ ID NO: 5808.
XX KW Coryneform bacterium; amino acid synthesis; vitamin; saccharide;
XX KW organic acid synthesis.
XX OS Corynebacterium glutamicum.
XX PN EPI108790-A2.
XX PD 20-JUN-2001.
XX PF 18-DEC-2000; 2000EP-0127688.
XX PR 16-DEC-1999; 99JP-0377484.
XX PR 07-APR-2000; 2000JP-0159162.
XX PR 03-AUG-2000; 2000JP-0280988.
XX PA (KYOW ) KYOWA HAKKO KOGYO KK.
XX PI Nakagawa S, Mizoguchi H, Ando S, Hayashi M, Ochiai K, Yokoi H;
XX PI Tateishi N, Senoh A, Ikeda M, Ozaki A;
XX DR WPI; 2001-376931/40.
XX DR N-PSDB; AAH67273.
XX PT Novel polynucleotides derived from Coryneform bacteria, for identifying
XX PT mutation point of a gene, measuring expression of a gene, analysing

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08-JUL-1999; 99DE-1031433;
08-JUL-1999; 99DE-1031433;

Db 115 TVLVGFNRRFAAGFAAARARIDAGDIGTQPQLLRSVTRDPGPFADP 161

Qy 170 I-----SRLTWL-----VSLFGLSVSATLEERKEDQYMKMTVCLETEKK--SPL 213
Db 174 VIVDLGVHVTDFLRWFSEPIEVFAVCKAIRGEARVKNKTHDHVVMFKFEGGKTGIGEV 233
Qy 214 SWIEKGGGLKRNRYLSHF-----KSGSLE----NVPNGVKNKIFLKQDNIPVQKLL 263
Db 234 SWSYPMPP-----KYGVFYHLDIIGKNGRIRYTPMDTPVGVVKSSEFMPR---FSPML 285
Qy 264 GQSEKELAAEKKRILHCL 282
Db 286 STFPQ-AFEALRHFFECI 303

RESULT 15
ID AAU34111 standard; Protein; 341 AA.
AC AAU34111;
XX
DT 13-FEB-2002 (first entry)
XX
DE Staphylococcus aureus cellular proliferation protein #387.
XX
KW Antisense; prokaryotic cellular proliferation protein;
XX antibiotic; antibacterial; drug design.
XX
OS Staphylococcus aureus.
XX
PN WO200170955-A2.
XX
PD 27-SEP-2001.
XX
PF 21-MAR-2001; 2001WO-US09180.
XX
PR 21-MAR-2000; 2000US-191078P.
PR 23-MAY-2000; 2000US-206848P.
PR 26-MAY-2000; 2000US-207727P.
PR 23-OCT-2000; 2000US-242578P.
PR 27-NOV-2000; 2000US-253625P.
PR 22-DEC-2000; 2000US-257931P.
PR 16-FEB-2001; 2001US-269308P.
XX
PA (ELIT-) ELITRA PHARM INC.
XX
PI Haselbeck R, Ohlsen KL, Zyskind JW, Wall D, Trawick JD, Carr GJ;
PI Yamamoto RT, Xu HH;
XX
DR WPI; 2001-611495/70.
XX N-PSDB; AAS51970.
PT New polynucleotides for the identification and development of
PT antibiotics, comprise sequences of antisense nucleic acids -
XX
PS Example 3; Seq ID No 5607; 511pp; English.
XX
CC The invention relates to antisense inhibitors of genes essential to
CC prokaryotic cellular proliferation, their use in identifying the
CC genes themselves and the discovery of novel antibiotics, the essential
CC genes themselves and the encoded proteins. The prokaryotes used are
CC Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella
CC pneumoniae, Pseudomonas aeruginosa and Enterococcus faecalis. The
CC invention is also useful for the identification of potential new targets
CC for antibiotic development. The antisense nucleic acids can also be used
CC to identify proteins used in proliferation, to express these proteins,
CC and to obtain antibodies capable of binding to the expressed proteins.
CC The proteins can be used to screen compounds in rational drug discovery
CC programmes. The antisense nucleic acid sequence is also useful to screen
CC for homologous nucleic acids which are required for cell proliferation in
CC a wide variety of organisms. The present sequence represents an
CC essential prokaryotic cellular proliferation protein.
CC Note: The sequence data for this patent did not form part
CC of the printed specification, but was obtained in electronic
CC format directly from WIPO at

CC ftp.wipo.int/pub/published_pct_sequences.
XX
SQ Sequence 341 AA;

Query Match 7.7%; Score 116.5; DB 22; Length 341;
Best Local Similarity 27.8%; Pred. No. 0.0078;
Matches 42; Conservative 21; Mismatches 65; Indels 23; Gaps 4;

Qy 11 VVVVGVRAGSVVRMDLRNPHPSAFLNLIGFVSRRELGSIDGVOQISLEDALESSOE--- 67
Db 3 VGVIGVG--GIAQDRHI-----PALLKLDTVSLVAVQDINTVOMIDVAKRFNIPHYVE 54
Qy 68 -----VEVAYICSESSSHEDYIRQFLNAGKHVLEVPMTLSLAAAQELWELAEQK 119
Db 55 TPSELFKLVDVAVICTPNKFHADLSIEALNHGVHVLCEKPHAMTTECDRMIEAANKNCK 114
Qy 120 VL----HEEHVELLMEEFAFLKKEVVGKDLL 146
Db 115 LLTVAYHYRHTDVAAMTAKKAIESGVVGKPLV 145

Search completed: November 1, 2002, 14:47:03
Job time : 70.0997 secs

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GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd.

OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:08 ; Search time 53.7749 Seconds
(without alignments)
952.238 Million cell updates/sec

Title: US-09-606-129A-3

Perfect score: 1508

Sequence: 1 MNTEPERKFGVVVGVGRAG.....RILHCLGLAEIQQYCCSRK 296

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

- SPTREMBL_19:*
- 1: sp_archaea:*
 - 2: sp_bacteria:*
 - 3: sp_fungi:*
 - 4: sp_human:*
 - 5: sp_invertebrate:*
 - 6: sp_mammal:*
 - 7: sp_mhc:*
 - 8: sp_organelle:*
 - 9: sp_phage:*
 - 10: sp_plant:*
 - 11: sp_rodent:*
 - 12: sp_virus:*
 - 13: sp_vertebrate:*
 - 14: sp_unclassified:*
 - 15: sp_rvirus:*
 - 16: sp_bacteriap:*
 - 17: sp_archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	1503	99.7	296	4 Q96QL4	Q96ql4 homo sapien
2	1502	99.6	296	4 Q9BRW8	Q9brw8 homo sapien
3	1264.5	83.9	295	11 Q9CV64	Q9cv64 mus musculus
4	1264.5	83.9	303	11 Q9DD21	Q9dd21 mus musculus
5	463	30.7	92	4 Q95019	Q95019 homo sapien
6	217	14.4	328	16 P72782	P72782 synechocyst
7	157.5	10.4	371	17 Q970H0	Q970h0 sulfolobus
8	143	9.5	393	16 P94437	P94437 bacillus su
9	141	9.4	318	17 O26961	O26961 methanother
10	137.5	9.1	382	16 Q986T3	Q986t3 rhizobium l
11	136.5	9.1	364	10 O23580	O23580 arabidopsis
12	132	8.8	360	16 Q9WZ54	Q9wz54 thermotoga
13	130.5	8.7	335	5 Q9VQB3	Q9vqb3 drosophila
14	130.5	8.7	368	3 O42896	O42896 schizosacch
15	129.5	8.6	324	16 Q9CFC7	Q9cfc7 lactococcus
16	129	8.6	319	2 Q93PS4	Q93ps4 comamonas t

17	127	8.4	351	16 Q98DB4	Q98db4 rhizobium l
18	124.5	8.3	369	3 O13991	O13991 schizosacch
19	123.5	8.2	315	2 Q9KWL3	Q9kwl3 pseudomonas
20	123.5	8.2	371	17 O59539	O59539 pyrococcus
21	123	8.2	330	2 O52566	O52566 amycolatops
22	122	8.1	338	16 Q92ET3	Q92et3 listeria in
23	121.5	8.1	323	16 Q92F05	Q92f05 listeria in
24	121.5	8.1	346	16 Q99X04	Q99x04 staphylococ
25	121	8.0	341	17 Q9UXK4	Q9uxk4 pyrococcus
26	120.5	8.0	369	2 Q9L3U7	Q9l3u7 streptomyce
27	120	8.0	346	2 Q54531	Q54531 streptomyce
28	119	7.9	308	16 Q92QY5	Q92qy5 rhizobium m
29	119	7.9	343	16 Q926S4	Q926s4 listeria in
30	117.5	7.8	357	16 Q9CIU1	Q9ciul lactococcus
31	116	7.7	328	2 Q9LCW9	Q9lcw9 streptomyce
32	116	7.7	358	2 O52495	O52495 listeria mo
33	116	7.7	378	2 Q9RDH5	Q9rdh5 streptomyce
34	115	7.6	358	16 Q929K9	Q929k9 listeria in
35	114	7.6	360	16 Q9HU35	Q9hu35 pseudomonas
36	114	7.6	371	2 Q9RK99	Q9rk99 streptomyce
37	112	7.4	332	2 Q9ALN5	Q9aln5 saccharopol
38	112	7.4	333	11 Q9DBB8	Q9dbb8 mus musculu
39	112	7.4	359	16 Q932K4	Q932k4 staphylococ
40	111.5	7.4	315	17 Q9UZ13	Q9uz13 pyrococcus
41	111.5	7.4	331	16 Q98CV0	Q98cv0 rhizobium l
42	111.5	7.4	349	16 Q929L3	Q929l3 listeria in
43	111	7.4	334	16 Q9WYP5	Q9wyp5 thermotoga
44	110.5	7.3	305	16 Q9CEL4	Q9cel4 lactococcus
45	110	7.3	314	2 Q93N64	Q93n64 coxiella bu

ALIGNMENTS

RESULT 1

ID	Q96QL4	PRELIMINARY;	PRT;	296 AA.
AC	Q96QL4:			
DT	01-DEC-2001 (TrEMBLrel. 19, Created)			
DT	01-DEC-2001 (TrEMBLrel. 19, Last sequence update)			
DT	01-DEC-2001 (TrEMBLrel. 19, Last annotation update)			
DE	UNKNOWN (PROTEIN FOR MGC:14706).			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=PROSTATE;			
RA	Strausberg R.;			
RL	Submitted (MAY-2001) to the EMBL/GenBank/DBJ databases.			
DR	EMBL; BC008456; AAH08456.1; -			
SQ	SEQUENCE 296 AA; 33428 MW; 2CF2AA7F1CDD8707 CRC64;			

Query Match	99.7%;	Score 1503;	DB 4;	Length 296;
Best Local Similarity	99.7%;	Pred. No. 1.1e-118;		
Matches 295;	Conservative 0;	Mismatches 1;	Indels 0;	Gaps 0;
Qy	1	MNTEPERKFGVVVGVGRAGSVRMRLRNPHPSAFLNLIGFVSRRELGSIDGVQOQ1SLE	60	
Db	1	MNAEPERKFGVVVGVGRAGSVRMRLRNPHPSAFLNLIGFVSRRELGSIDGVQOQ1SLE	60	
Qy	61	DALSSQEVAVAYICSESSSHEDYIROFLNAGKHVLVEYPMTLSLAAQELWELAEQKGV	120	
Db	61	DALSSQEVAVAYICSESSSHEDYIROFLNAGKHVLVEYPMTLSLAAQELWELAEQKGV	120	
Qy	121	LHEHVELLMEEFAFLKKEVGVKDLLKGLLFTAGLPEERFGFPAPFGISRLTWLVSLF	180	
Db	121	LHEHVELLMEEFAFLKKEVGVKDLLKGLLFTAGLPEERFGFPAPFGISRLTWLVSLF	180	
Qy	181	GELSLVATLEERKEDQYMKMTVCLETEKKSPLSWIEEKGPGLKRNRYLSFHFHSGSLEN	240	
Db	181	GELSLVATLEERKEDQYMKMTVCLETEKKSPLSWIEEKGPGLKRNRYLSFHFHSGSLEN	240	

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QY 241 VPNVGNKNIPLKQDNIFVQKLLGQFSEKELAAEKKRILHCLGLAEIEIQYCCSRK 296
|||||
DB 241 VPNVGNKNIPLKQDNIFVQKLLGQFSEKELAAEKKRILHCLGLAEIEIQYCCSRK 296

RESULT 2
Q9BRW8 ID Q9BRW8 PRELIMINARY; PRT; 296 AA.
AC Q9BRW8; 2001 (Tremblrel. 17, Created)
DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)
DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)
DE STIMILAR TO BILIVERDIN REDUCTASE A.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=BRAIN, PRIMITIVE NEUROECTODERMAL;
RA Strausberg R.;
RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; BC005902; AA05902.1; -.
DR InterPro; IPR000683; GFO_IDH_MoCA.
DR Pfam; PF01408; GFO_IDH_MoCA; 1.
SQ SEQUENCE 296 AA; 33432 MW; A389AFDDB6ADBABF CRC64;

Query Match 99.6%; Score 1502; DB 4; Length 296;
Best Local Similarity 99.7%; Pred. No. 1.3e-118;
Matches 295; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MNTPEPKFGVVVGVGRAGSVRMRLRNPHPSAFNLNIGFVSRRRLGSDGVQOQISLE 60
|||||
DB 1 MNTPEPKFGVVVGVGRAGSVRMRLRNPHPSAFNLNIGFVSRRRLGSDGVQOQISLE 60

QY 61 DALSSQVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120
|||||
DB 61 DALSSQVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120

QY 121 LHEEHVELLEEFALKEVYKVDLLKGSLLFTAGPLEEERFGFPAPSGISRLTWLSLF 180
|||||
DB 121 SHEEHVELLEEFALKEVYKVDLLKGSLLFTAGPLEEERFGFPAPSGISRLTWLSLF 180

QY 181 GELSLVSATLEERKEDQYMKTVCTLETKKSPLSWIEKPGPKLRNRYLSFHPKSGSLEN 240
|||||
DB 181 GELSLVSATLEERKEDQYMKTVCTLETKKSPLSWIEKPGPKLRNRYLSFHPKSGSLEN 240

QY 241 VPNVGNKNIPLKQDNIFVQKLLGQFSEKELAAEKKRILHCLGLAEIEIQYCCSRK 296
|||||
DB 241 VPNVGNKNIPLKQDNIFVQKLLGQFSEKELAAEKKRILHCLGLAEIEIQYCCSRK 296
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RESULT 3
Q9CY64 ID Q9CY64 PRELIMINARY; PRT; 295 AA.
AC Q9CY64;
DT 01-JUN-2001 (Tremblrel. 17, Created)
DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)
DE 2500001N03RIK PROTEIN.
GN 2500001N03RIK.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=EMBRYONIC LIVER;
RX MEDLINE=21085660; PubMed=11217851;
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
Kuehl P., Lewis S., Matsuo Y., Nikaudo I., Pesole G., Quackenbush J.,
Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
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RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
Kadota K., Matsuo Y., Nikaudo I., Pesole G., Quackenbush J.,
Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
Kuehl P., Lewis S., Matsuo Y., Nikaudo I., Pesole G., Quackenbush J.,
Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
Nardone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
Hayashizaki Y.
RA "Functional annotation of a full-length mouse cDNA collection.";
RT Nature 409:685-690(2001).
DR EMBL; AK010847; BAB27219.1; -.
DR MGD; MGI:1917355; 2500001N03RIK.
DR InterPro; IPR000683; GFO_IDH_MoCA.
DR Pfam; PF01408; GFO_IDH_MoCA; 1.
SQ SEQUENCE 295 AA; 33524 MW; F2E1682BD77032A4 CRC64;

Query Match 83.9%; Score 1264.5; DB 11; Length 295;
Best Local Similarity 83.9%; Pred. No. 1.4e-98;
Matches 245; Conservative 26; Mismatches 20; Indels 1; Gaps 1;

QY 1 MNTPEPKFGVVVGVGRAGSVRMRLRNPHPSAFNLNIGFVSRRRLGSDGVQOQISLE 60
|||||
DB 1 MNTPEPKFGVVVGVGRAGSVRIRDLKDPH-SSAFNLNIGYVSRRRLGSLDNVQISLE 59

QY 61 DALSSQVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120
|||||
DB 61 DALSSQVEVAYICSESSSHEDYIRQFLQAGKHVLYEYPMALSFAAQELWELAAQGRV 119

QY 121 LHEEHVELLEEFALKEVYKVDLLKGSLLFTAGPLEEERFGFPAPSGISRLTWLSLF 180
|||||
DB 121 LHEEHVELLEEFALKEVYKVDLLKGSLLFTAGPLEEERFGFPAPSGISRLTWLSLF 179

QY 181 GELSLVSATLEERKEDQYMKTVCTLETKKSPLSWIEKPGPKLRNRYLSFHPKSGSLEN 240
|||||
DB 181 GELSLVSATLEERKEDQYMKTVCTLETKKSPLSWIEKPGPKLRNRYLSFHPKSGSLEN 239

QY 241 VPNVGNKNIPLKQDNIFVQKLLGQFSEKELAAEKKRILHCLGLAEIEIQYCC 292
|||||
DB 240 VPNVGNKNIPLKQDNIFVQKLLGQVSAEDLAAEKKRILHCLGLASDIQRLC 291

RESULT 4
Q9DD21 ID Q9DD21 PRELIMINARY; PRT; 303 AA.
AC Q9DD21;
DT 01-JUN-2001 (Tremblrel. 17, Created)
DT 01-JUN-2001 (Tremblrel. 17, Last sequence update)
DE 0610006A11RIK PROTEIN.
GN 0610006A11RIK.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=KIDNEY;
RX MEDLINE=21085660; PubMed=11217851;
RA Kawai J., Shingagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
Kuehl P., Lewis S., Matsuo Y., Nikaudo I., Pesole G., Quackenbush J.,
Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
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RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashizaki Y.,
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690(2001).
DR EMBL; AK002231; BAB21950.1; -.
DR MGI; 1915580; 0610006A1IRik.
DR InterPro; IPR000683; GFO_IDH_MOCA.
DR Pfam; PF01408; GFO_IDH_MOCA; 1.
SQ SEQUENCE 303 AA; 34491 MW; 52D8A3B02EE956EB CRC64;

Query Match 83.9%; Score 1264.5; DB 11; Length 303;
Best Local Similarity 83.9%; Pred. No. 1.4e-98;
Matches 245; Conservative 26; Mismatches 20; Indels 1; Gaps 1;

QY 1 MNTPEPKFVVGVVGRAGSVNRDLRNPSPSAFLNLIGFVSRRELGSIDGVQOISLE 60
Db 1 MSTEPRKRFVVGVVGRAGSVNRDLRNPSPSAFLNLIGFVSRRELGSIDGVQOISLE 59
QY 61 DALSSQVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120
Db 60 DALRSQVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 119
QY 121 LHEEHVELLMEEFAFLKKEVGVKDLKSLFTAGPLEERFPGFPAFSGISRLTWLSLF 180
Db 120 LHEEHVELLMEEFAFLKKEVGVKDLKSLFTAGPLEERFPGFPAFSGISRLTWLSLF 179
QY 181 GELSLVSATLEERKEDQYMKMTVCLETEKKSPLSWIEKEGPGFKRNRYLSFHFKSGSLEN 240
Db 180 GELSLVSATLEERKEDQYMKMTVCLETEKKSPLSWIEKEGPGFKRNRYLSFHFKSGSLEN 239
QY 241 VPNGVKNKIFLKDONTFVKLLGQFSEKELAEKRLILCLGLAEETQKYC 292
Db 240 VPNGVKNKIFLKDONTFVKLLGQFSEKELAEKRLILCLGLAEETQKYC 291

RESULT 5
Q95019 PRELIMINARY; PRT; 92 AA.
AC Q95019;
DT 01-May-1999 (TrEMBLrel. 10, Created)
DT 01-May-1999 (TrEMBLrel. 10, Last sequence update)
DT 01-Dec-2001 (TrEMBLrel. 19, Last annotation update)
DE BILIVERDIN-IX ALPHA REDUCTASE (FRAGMENT).
GN BLVRA.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA Cordes M., Wohldman P., Morris M.;
RT "The sequence of Homo sapiens PAC clone RP5-974M14.";
RL Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RA Waterston R.;
RL Submitted (DEC-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AC004939; AAD05025.1; -.
FT NON_TER 1
FT NON_TER 92
SQ SEQUENCE 92 AA; 10552 MW; 390331108449BD93 CRC64;

Query Match 30.7%; Score 463; DB 4; Length 92;
Best Local Similarity 100.0%; Pred. No. 9.7e-32;
Matches 92; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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QY 119 KVLHEEHVELLMEEFAFLKKEVGVKDLKSLFTAGPLEERFPGFPAFSGISRLTWLS 178
Db 1 KVLHEEHVELLMEEFAFLKKEVGVKDLKSLFTAGPLEERFPGFPAFSGISRLTWLS 60
QY 179 LFGELSLVSATLEERKEDQYMKMTVCLETEKK 210
Db 61 LFGELSLVSATLEERKEDQYMKMTVCLETEKK 92

RESULT 6
P72782 PRELIMINARY; PRT; 328 AA.
AC P72782;
DT 01-FEB-1997 (TrEMBLrel. 02, Created)
DT 01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE BILIVERDIN REDUCTASE.
GN SLR1784.
OS Synechocystis sp. (strain PCC 6803).
OC Bacteria; Cyanobacteria; Chroococcales; Synechocystis.
OX NCBI_TaxID=1148;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=97061201; PubMed=8905231;
RA Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,
RA Miyajima N., Hirose M., Sugita M., Saito M., Saito K., Okumura S.,
RA Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Okumura S.,
RA Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.,
RA Tabata S.;
RT "Sequence analysis of the genome of the unicellular cyanobacterium
RT Synechocystis sp. strain PCC6803. II. Sequence determination of the
RT entire genome and assignment of potential protein-coding regions.";
RL DNA Res. 3:109-136(1996).
DR EMBL; D90900; BAA16797.1; -.
DR InterPro; IPR000683; GFO_IDH_MOCA.
DR InterPro; IPR004104; GFO_IDH_MOCA_C.
DR Pfam; PF01408; GFO_IDH_MOCA; 1.
DR Pfam; PF02894; GFO_IDH_MOCA_C; 1.
KW Complete proteome.
SQ SEQUENCE 328 AA; 36640 MW; 51474ABD26B2C7EF CRC64;

Query Match 14.4%; Score 217; DB 16; Length 328;
Best Local Similarity 24.9%; Pred. No. 3.2e-10;
Matches 79; Conservative 57; Mismatches 139; Indels 42; Gaps 11;

QY 11 VVVVGVGRAGSVNRDLRNPSPSAFLNLIGFVSRRELGSID-----GVQ-QISLEDAIS 64
Db 13 VGVVGTGYAAQRAAEVFRGDRS----QLVSFWCNSEANTAKFADTFGVRPQSQWQALIN 68
QY 65 SQEVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAEQKGVLEE 124
Db 69 DPEIDLVLIAITINOLHGAIAEAAALQAGKHVLYEYPMTLSLAAQELWELAEQKGVLEE 128
QY 125 HVELLMEEFAFLKKEV--VGKDL-LKGSLLFTAGPLEE-----ERFGEPAFSGISRLTW 175
Db 129 HIELLGGVHQAIRQNIGKIGEVFYARISTIMGQNPAPQRTYHHQQFGFPLVAALSISR 188
QY 176 LVSLFGLSLVSATLE--ERKEDQYMK---MTVCLETEKKSPLSWIEKEGPGFKRN- RYL 229
Db 189 FTDLFGTVQVQVDAOCRFWDQNPQNFYFRACLATAYLQFNNGLKAEBVYKGEVFNQERIF 248
QY 230 SFHFKSGSL-----ENVPNVGVKNKIFLKDONTFVKLLGQFSEKELAEKRLILCLGLAE 275
Db 249 TLHGDRGTLIFVGETGRILGQGTETITVGSRRGLFRQDTEAVLDYLT---TGKPLVVDL 305
QY 276 KRILHCLGLAEETQKYC 292
Db 306 EASLYALEVADLCAQAC 322

RESULT 7
Q97UHO
```

ID	Q97UH0	PRELIMINARY;	PRT;	371 AA.
AC	Q97UH0;			
DT	01-OCT-2001	(TrEMBLrel. 18, Created)		
DT	01-OCT-2001	(TrEMBLrel. 18, Last sequence update)		
DT	01-DEC-2001	(TrEMBLrel. 19, Last annotation update)		
DE	DEHYDROGENASE, PUTATIVE.			
GN	SSO3049.			
OS	Sulfolobus solfataricus.			
OC	Archaea; Crenarchaeota; Sulfolobales; Sulfolobaceae; Sulfolobus.			
OX	NCBI_TaxID=2287;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	STRAIN=ATCC 35092 / DSM 1617 / P2;			
RX	MEDLINE=21332296; PubMed=11427726;			
RA	She Q., Singh R.K., Confalonieri F., Zivanovic Y., Allard G.,			
RA	Awayez M.J., Chan-Weiher C.C.-Y., Clausen I.G., Curtis B.A.,			
RA	De Moors A., Erauso G., Fletcher C., Gordon P.M.K.,			
RA	Heikamp-de Jong I., Jeffries A.C., Kozera C.J., Medina N., Peng X.,			
RA	Thi-Ngoc H.P., Redder P., Schenk M.E., Theriault C., Tolstrup N.,			
RA	Charlebois R.L., Doolittle W.F., Duquet M., Gaasterland T.,			
RA	Garratt R.A., Ragan M.A., Sensen C.W., Van der Oost J.;			
RT	"The complete genome of the crenarchaeon Sulfolobus solfataricus P2.";			
RL	Proc. Natl. Acad. Sci. U.S.A. 98:7835-7840(2001).			
DR	EMLB; AE006896; AAK43149.1; -.			
DR	InterPro: IPR000683; GFO_IDH_MOCA.			
DR	InterPro: IPR004104; GFO_IDH_MOCA_C.			
DR	Pfam: PF01408; GFO_IDH_MOCA; 1.			
KW	Pfam: PF02894; GFO_IDH_MOCA_C; 1.			
DW	Complete proteome.			
SK	SEQUENCE 371 AA; 41760 MW; DAAL6465DS3306B CRC64;			
Query Match	10.4%; Score 157.5; DB 17; Length 371;			
Best Local Similarity	19.9%; Pred. No. 3.9e-05;			
Matches	64; Conservative 59; Mismatches 118; Indels 81; Gaps 10;			
QY	7	RKFGVVVGVGRAGSVRMRLRNPHPSAFNLIGTVSR-----RELGSIDGV-QQISLE 60		
Db		:: :: :: :		
QY	18	KRIGVAVVGSGTGKTHVKALKOLEKETEFVKLVAVVDQIKAEIKGSEYGTPTYTID 77		
QY	61	DALLSQEVEAYICSESSHEDIYIQFLNAGKHVLVEPMTLSAAAGELWEAEOK--- 117		
Db		: :		
QY	78	EVLNSVDVISIATPSYLHAPQAILAIEYKKHIVIERPMATTLAGREMVSRAERNEVK 137		
Db		: :		
QY	118	-GKVLHEEH-----VELLMEEP-----AFLKEVGVGKDLLKGSLIF 152		
Db		: :		
QY	138	LGVIFQERYAPDIRLRANDILKELGRILYLIESELKWYRDMMKYGYKREIARS----- 189		
QY	153	TAGPLEEREGFPAFSGISRITWLVSFLGELSLSVANLEEKEDQYMKMVCLETETKSP 212		
Db		: :		
QY	190	WRGMWNTEGGGVMTNOGIHTIDLMIWLNGEVEEVSGFVDNLTHDG-----IE- 236		
QY	213	LSWTEKPGKLKRNRYSLFHFPGKSLENVPNV-----GVNKNTFLKDON 256		
Db		: :		
QY	237	----VEDTAVAIMR-----YKNALGTISQTVMSEKPTTYQYKIRVNGSNGFVEITDGS 286		
Db		: :		
QY	257	IFVQKLLGFSEKELAAEKKR 277		
Db		: :		
QY	287	LSTVAIEGKIEESKSVEYKK 307		
Db		: :		
RESULT 8				
P94437				
ID	P94437	PRELIMINARY;	PRT;	393 AA.
AC	P94437;			
DT	01-MAY-1997	(TrEMBLrel. 03, Created)		
DT	01-MAY-1997	(TrEMBLrel. 03, Last sequence update)		
DT	01-DEC-2001	(TrEMBLrel. 19, Last annotation update)		
DE	YFII.			
GN	YFII.			
OS	Bacillus subtilis.			
OC	Bacteria; Firmicutes; Bacillus/Clostridium group;			
OC	Bacillus/Staphylococcus group; Bacillus.			
OX	NCBI_TaxID=1423;			

```

RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=AC327;
RX MEDLINE=971128783; PubMed=89733323;
RY Yamamoto H., Uchiyama S., Sekiguchi J.;
RT "The Bacillus subtilis chromosome region near 78 degrees contains the
RL genes encoding a new two-component system, three ABC transporters and
RN Gene 181:147-151(1996).
RP [2]
RC SEQUENCE FROM N.A.
RX STRAIN=168;
RY MEDLINE=38044033; PubMed=9384377;
RA Kunst F., Ogasawara N., Mosser I., Albertini A.M., Alloni G.,
RA Avevedo V., Bertero M.G., Bessieres P., Bolotin A., Borcherst S.,
RA Borriss R., Boursier L., Brans A., Braun M., Brignell S.C., Bron S.,
RA Brouillet S., Bucherl C.V., Caldwell B., Capuano V., Carter N.M.,
RA Choi S.K., Codani J.J., Conerton I.F., Cummings N.J., Daniel R.A.,
RA Denizot F., Devine K.M., Dusterhoft A., Ehrlich S.D., Emerson P.T.,
RA Entian K.D., Errington J., Fabret C., Ferrari E., Foulger D.,
RA Fritz C., Fujita M., Fujita Y., Fuma S., Galizzi A., Galleron N.,
RA Gim S.Y., Glaser P., Goffeau A., Golightly E.J., Grandi G.,
RA Guiseppi G., Guy B.J., Haga K., Halech J., Harwood C.R., Henaut A.,
RA Hilbert H., Holsappel S., Hosono S., Hullio M.F., Itaya M., Jones L.,
RA Joris B., Karamata D., Kasahara Y., Klaere-Blandhard M., Klein C.,
RA Kobayashi Y., Koetter P., Koningsstein G., Krogh S., Kumano M.,
RA Kurita K., Lapidus A., Lardinou S., Lauber J., Lazarevic V.,
RA Lee S.M., Levine A., Liu H., Masuda S., Mauel C., Medigue C.,
RA Medina N., Mellado R.P., Mizuno M., Moestl D., Nakai S., Noback M.,
RA Noone D., O'Reilly M., Ogawa K., Ogiwara A., Oudega B., Park S.H.,
RA Parro V., Pohl T.M., Portetelle D., Porwollik S., Prescott A.M.,
RA Presecan E., Pujic P., Purnelle B., Rapoport G., Rey M., Reynolds S.,
RA Rieger M., Rivolta C., Rocha E., Roche B., Rose M., Sadate Y.,
RA Sato T., Scanlan E., Schleich S., Schroeter R., Scoffone F.,
RA Sekiguchi J., Sekowska A., Seror S.J., Serror P., Shin B.S., Soldo B.,
RA Sorokin A., Tacconelli E., Takagi T., Takahashi H., Takemaru K.,
RA Takeuchi M., Tamakoshi A., Tanaka T., Terstra P., Tognoni A.,
RA Tosato V., Uchiyama S., Vandenbol M., Vannier F., Vassarotti A.,
RA Viari A., Wambutt R., Wedler H., Wedler H., Weitzenecker T.,
RA Winters P., Wipat A., Yamamoto H., Yamane K., Yasumoto K., Yata K.,
RA Yoshida K., Yoshikawa H.F., Zumbstein E., Yoshikawa H., Danchin A.;
RT "The complete genome sequence of the gram-positive bacterium Bacillus
RL subtilis.";
RN Nature 390:249-256(1997).
RP [3]
RC SEQUENCE FROM N.A.
RX STRAIN=168;
RY Kunst F., Ogasawara N., Yoshikawa H., Danchin A.;
RA Submitted (NOV-1997) to the EMBL/GenBank/DDBJ databases.
RD EMBL; D78508; BAB11399.1; -.
DR ENBL; Z99108; CAB12657.1; -.
DR InterPro; IPR000683; GFO_IDH_Moca_C.
DR InterPro; IPR004104; GFO_IDH_Moca_C.
DR Pfam; PF01408; GFO_IDH_Moca; 1.
DR Pfam; PF02894; GFO_IDH_Moca_C; 1.
KW Complete proteome.
SQ SEQUENCE 393 AA; 43584 MW; 3EEB326E1A047602 CRC64;

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[illegible]


```
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Klamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Svirkas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wasarman D.A., Weinstein G.M., Weissbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O.,
RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.;
RT "The genome sequence of Drosophila melanogaster.";
RL Science 287:2185-2195(2000).
DR EMBL: AE003583; AF51263.1;
DR FlyBase; FBgn0031417; CG3597.
DR InterPro; IPR000683; GFO_IDH_Moca.
DR InterPro; IPR004104; GFO_IDH_Moca_C.
DR Pfam; PF01408; GFO_IDH_Moca.1.
DR Pfam; PF02894; GFO_IDH_Moca_C.1.
SQ SEQUENCE 335 AA; 37812 MW; ELAEB59E5F270612 CRC64;

Query Match 8.7%; Score 130.5; DB 5; Length 335;
Best Local Similarity 23.2%; Pred. No. 0.0064;
Matches 71; Conservative 43; Mismatches 96; Indels 96; Gaps 15;

Qy 1 MNTPEPKFGVVVG-----VGRAGSVRMEDLNPHPSAFLNLIG-----FVSRREL- 48
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 1 MQSQANLWGAAGRITQDVTALGTVE---KSRHVVAADVQGRQAQQAQNRQIP 56

Qy 49 GSIDGVQOQISLEDALSSQEVAVICSESSHEDYIROFLNAGKHLVPEYPMTLSLAAQ 108
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 57 RHYDGFDAID-----REVEVVVGTLPNPHYAVVHLMARGKNVLCETPMCLSVQAK 111
| : : : : : | : : : : : | : : : : : | : : : : : | : : :

Qy 109 ELWELAEQKGVLEHVEHVELLMEEF---AFLKKEVVGK-----D 144
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 112 ELYTLAEQRGVFLMEGMWSREFPSYDRLELLKNDVIGEVTVQVKGHGFRLAHMERVCNR 171

Qy 145 LKGSLLFTAG--PLEERFGFPFAGSIS-----R 172
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 172 SLGGSILMDIGIYALQLGQFVF---GVSPVKILPSGTQLNKERVVDQIDFMDYDGGRR 227

Qy 173 LTWLVSFLFGL---SLVSATLEERKEDQYMKMTVCLETEKKS---PLSWIEKGPGLKRN 227
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 228 LVALVTGLENLENDAVITGTGKEIKLSNW---CCTQISRSNAPPESW-----PLPRAK 278

Qy 228 YLSFHF 233
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 279 F-DFHY 283

RESULT 14
O42896
ID O42896 PRELIMINARY; PRT; 368 AA.
AC O42896;
DT 01-JUN-1998 (TrEMBLrel. 06, Created)
DT 01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DE 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE HYPOTHETICAL OXIDOREDUCTASE C115.03 IN CHROMOSOME II (EC 1.-.-.-).
GN SPBC115.03 OR SPBC24E9.18C.
OS Schizosaccharomyces pombe (Fission yeast).
OC Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
OC Schizosaccharomycetales; Schizosaccharomycetaceae;
OC Schizosaccharomycetes.
OX NCBI_TaxID=4896;
RN [1]
```

```
RP SEQUENCE FROM N.A.
RC STRAIN=972;
RA Wood V., Rajandream M.A., Barrell B.G., Devlin K., Churcher C.M.;
RL Submitted (MAR-1998) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: BELONGS TO THE YHX FAMILY OF OXIDOREDUCTASES.
DR EMBL; AL022105; CAA17915.1; -
DR InterPro; IPR000683; GFO_IDH_Moca.
DR InterPro; IPR004104; GFO_IDH_Moca_C.
DR Pfam; PF01408; GFO_IDH_Moca.1.
DR Pfam; PF02894; GFO_IDH_Moca_C.1.
KW Hypothetical protein; Oxidoreductase.
FT DOMAIN 359 365 POLY-SER.
SQ SEQUENCE 368 AA; 41271 MW; D2DC7A6AA2C3F377 CRC64;

Query Match 8.7%; Score 130.5; DB 3; Length 368;
Best Local Similarity 24.1%; Pred. No. 0.0073;
Matches 45; Conservative 30; Mismatches 61; Indels 51; Gaps 4;

Qy 34 SAFNLNIGFVSRRELGSIDGVQOQISLEDALSSQEVAVICSESSHEDYIROFLNAGKH 93
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 49 SAYPNILVYT-----NLDELLADVIELVVVSLPPNVHSEIVKKALNACKH 94

Qy 94 VLVPEYPMTLSLAAQELWELAEQKGVLEHVEHVELLMEEFAPFLKKEVVGKDLLKGSLLFT 153
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 95 VVCEKPEPTTYEAEKELYELAESKSLI-----AIYQNRWRWDGDLTAKKIIE 142

Qy 154 AGPL-----EERFGFPFAGSISR--LTWLVSFLFGLSLSVA 188
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 143 SGRIGQVVVEFESHFDYRLGRKSGWKDEPRGNGMVYIGSHLIDQAVSLFGTPYSVTA 202

Qy 189 TLEERKE 195
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 203 KLEAQRQ 209

RESULT 15
Q9CFCT
ID Q9CFCT PRELIMINARY; PRT; 324 AA.
AC Q9CFCT;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-OCT-2001 (TrEMBLrel. 18, Last annotation update)
DE OXIDOREDUCTASE.
GN YPJF.
OS Lactococcus lactis (subsp. lactis) (Streptococcus lactis).
OC Bacteria; Firmicutes; Bacillus/Clostridium group; Streptococcaceae;
OC Lactococcus.
OX NCBI_TaxID=1360;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=IL1403.
RX MEDLINE=2135186; PubMed=11337471;
RA Bolotin A., Wincker P., Mauger S., Jaillon O., Malarne K.,
RA Weissenbach J., Ehrlich S.D., Sorokin A.;
RT "The complete genome sequence of the lactic acid bacterium Lactococcus
RT lactis ssp. lactis IL1403.";
RL Genome Res. 11:731-753(2001).
DR EMBL; AE006386; AAK05652.1; -
DR InterPro; IPR000683; GFO_IDH_Moca.
DR Pfam; PF01408; GFO_IDH_Moca.1.
KW Complete proteome.
SQ SEQUENCE 324 AA; 36603 MW; DBF47D66684EB259C CRC64;

Query Match 8.6%; Score 129.5; DB 16; Length 324;
Best Local Similarity 21.5%; Pred. No. 0.0074;
Matches 64; Conservative 45; Mismatches 88; Indels 101; Gaps 13;

Qy 8 KFGVV-----VVGVRAGSVRMEDLNPHPSAFLNLIGFVSRRELSDGVQOIS 58
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
Db 3 KIGINGAAKIVPRFVAGVKESQA-----EVTGIAARNK-----EKAQKAA 43

Qy 59 LE-----DALSSQEVAVICSESSHEDYIROFLNAGKHLVPEYPMTLSLAA 107
| : : : : : | : : : : : | : : : : : | : : : : : | : : :
```


GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:41:32 ; Search time 15.2283 Seconds
(without alignments)
752.611 Million cell updates/sec

Title: US-09-606-129a-3

Perfect score: 1508

Sequence: 1 MNTEPERKGVVVGVVGRAG.....RILHCLGLAEIQTQKCCSRK 296

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_40.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	1490	98.8	296	1 BIEA_HUMAN	P53004 homo sapien
2	1247.5	82.7	295	1 BIEA_RAT	P46844 rattus norv
3	151.5	10.0	345	1 YHHX_ECOLI	P46853 escherichia
4	130.5	8.7	371	1 YH16_SYNY3	P74041 synechocyst
5	122.5	8.1	358	1 YVAA_BACSU	O32223 bacillus su
6	119.5	7.9	328	1 YULF_BACSU	O05265 bacillus su
7	108	7.2	341	1 YRBE_BACSU	O05389 bacillus su
8	105.5	7.0	349	1 YM94_YEAST	O04869 saccharomyc
9	104	6.9	334	1 YMO1_RHIME	P49305 rhizobium m
10	103.5	6.9	397	1 CBAC_COMTE	O44258 comamonas t
11	101.5	6.7	439	1 GFO_ZYMMO	O07982 zymomonas m
12	100	6.6	307	1 MVIM_ECOLI	P75931 escherichia
13	100	6.6	346	1 YDGJ_ECOLI	P77376 escherichia
14	100	6.6	410	1 PHT4_PSEPU	O05184 pseudomonas
15	100	6.6	533	1 ANFA_AZOVI	P12626 azotobacter
16	99.5	6.6	1076	1 RPOB_ASTLO	P27059 astasia lon
17	99	6.6	342	1 YISS_BACSU	P40332 bacillus su
18	98.5	6.5	1316	1 RPOC_MVCTU	P47769 mycobacteri
19	98	6.5	579	1 G160_HUMAN	Q08378 homo sapien
20	98	6.5	2418	1 SPCA_HUMAN	P02549 homo sapien
21	97	6.4	988	1 TNP6_ENTFC	O06238 enterococcu
22	95.5	6.3	2230	1 GOG4_HUMAN	O13439 homo sapien
23	95	6.3	328	1 YGJR_ECOLI	P42599 escherichia
24	94.5	6.3	1548	1 SMCV_MOUSE	Q62240 mus musculu
25	94	6.2	316	1 YH58_AQUAE	Q67638 aquifex aeo
26	94	6.2	931	1 DING_BACSU	P54394 bacillus su
27	93	6.2	307	1 MVIM_SALTY	P37168 salmonella
28	92.5	6.1	545	1 FLIF_BUCAI	P57175 buchnera ap
29	92.5	6.1	2051	1 FAS1_YEAST	P07149 s fatty aci
30	92	6.1	330	1 M12D_RHIME	O68965 rhizobium m
31	91.5	6.1	1959	1 MYH9_CHICK	P14105 gallus galli
32	91	6.0	695	1 VATI_METJA	O57675 methanococc
33	90.5	6.0	724	1 HMWR_HUMAN	O75330 homo sapien

RESULT 1

ID	BIEA_HUMAN	STANDARD;	PRT;	296 AA.
AC	P53004;			
DT	01-OCT-1996 (Rel. 34, Created)			
DT	01-OCT-1996 (Rel. 34, Last sequence update)			
DT	16-OCT-2001 (Rel. 40, Last annotation update)			
DE	Biliverdin reductase A precursor (EC 1.3.1.24) (Biliverdin-IX alpha-reductase).			
DE	BLVRA OR BLVR OR BVR.			
GN	Homo sapiens (Human).			
OS	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=Placenta;			
RX	MEDLINE=96202961; PubMed=8631357;			
RA	Maines M.D., Polevoda B.V., Huang T.-J., McCoubrey W.K. Jr.;			
RT	"Human Biliverdin IXalpha reductase is a zinc-metalloprotein.			
RT	Characterization of purified and Escherichia coli expressed			
RT	enzymes";			
RL	Eur. J. Biochem. 235:372-381(1996).			
RN	[2]			
RP	SEQUENCE FROM N.A.			
RA	Komuro A., Tobe T., Nakano Y., Yamaguchi T., Tomita M.;			
RL	Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.			
RN	[3]			
RP	SEQUENCE OF 1-117 FROM N.A.			
RA	Cordes M., Wollam C., Carter T.;			
RL	Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.			
RN	[4]			
RP	SEQUENCE OF 3-36; 48-74 AND 228-248.			
RC	TISSUE=Liver;			
RX	MEDLINE=93143333; PubMed=8424666;			
RA	Maines M.D., Trakshel G.M.;			
RT	"Purification and characterization of human biliverdin reductase.";			
RL	Arch. Biochem. Biophys. 300:320-326(1993).			
RN	[5]			
RP	SEQUENCE OF 3-22.			
RC	TISSUE=Liver;			
RX	MEDLINE=95014177; PubMed=7929092;			
RA	Yamaguchi T., Komoda Y., Nakajima H.;			
RT	"Biliverdin-IX alpha reductase and biliverdin-IX beta reductase from			
RL	human liver. Purification and characterization.";			
RN	J. Biol. Chem. 269:24343-24348(1994).			
CC	-/- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN.			
CC	-/- CATALYTIC ACTIVITY: Bilirubin + NAD(P)(+) = biliverdin + NAD(P)H.			
CC	-/- COFACTOR: BINDS ONE ZINC ION. HAS DUAL PH/COFACTOR (NADH, NADPH)			
CC	-/- SPECIFICITY. USES NADH AT THE ACIDIC PH RANGE (6-6.7) AND NADPH AT			
CC	THE ALKALINE RANGE (8.5-8.7).			
CC	-/- PATHWAY: FINAL STEP IN HEME METABOLISM.			
CC	-/- SUBUNIT: MONOMER.			
CC	-/- SUBCELLULAR LOCATION: Cytoplasmic.			
CC	-/- TISSUE SPECIFICITY: LIVER.			
CC	-/- SIMILARITY: TO E.COLI YHHX.			

P27725 serratia ma
O9m714 nicotiana t
O51555 borrelia bu
P42499 glycine max
P55937 mus musculu
P40457 saccharomyc
P39353 escherichia
O62209 mus musculu
O01550 xenopus lae
P26370 saccharomyc
P13925 streptococc
O58451 pyrococcus

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 CC -----
 CC EMBL; X93086; CAA63635.1; -;
 CC EMBL; U34877; AAC35588.1; -;
 CC EMBL; AC005189; AAC25526.1; -;
 CC DR MIM; 109750; -;
 CC DR InterPro; IPR000683; GFO_IDH_MoCA.
 CC DR Pfam; PF01408; GFO_IDH_MoCA; 1.
 CC KW Oxidoreductase; NAD; NADP; Zinc.
 CC FT PROPEP 1 2
 CC FT CHAIN 3 296 BILIVERDIN REDUCTASE A.
 CC FT DOMAIN 11 16 POLY-VAL.
 CC FT METAL 280 280 ZINC (POTENTIAL).
 CC FT METAL 281 281 ZINC (POTENTIAL).
 CC FT METAL 292 292 ZINC (POTENTIAL).
 CC FT METAL 293 293 ZINC (POTENTIAL).
 CC FT CONFLICT 3 3 A -> T (IN REF. 2).
 CC FT CONFLICT 154 155 SD -> AG (IN REF. 2).
 CC FT CONFLICT 160 160 D -> E (IN REF. 2).
 CC SQ SEQUENCE 296 AA; 33488 MW; 0DFD3B386F4DFC0A CRC64;

Query Match 98.8%; Score 1490; DB 1; Length 296;
 Best Local Similarity 98.8%; Pred. No. 1.9e-108;
 Matches 292; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
 QY 1 MNPTEPRKFGVVVGVGRAGSVRMRLRNPHPSAFNLIGFVSRRELGSIDGVQOISLE 60
 DB 1 MNAEPRKFGVVVGVGRAGSVRMRLRNPHPSAFNLIGFVSRRELGSIDGVQOISLE 60
 QY 61 DALSSQVEVAYICSSSSSHEDYIROFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120
 DB 61 DALSSQVEVAYICSSSSSHEDYIROFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120
 QY 121 LHEEHVELLMEEFAFLKKEVGVKDLKGLLFTAGPLEEERFGFPAPSGISRLTWLVSLF 180
 DB 121 LHEEHVELLMEEFAFLKKEVGVKDLKGLLFTAGPLEEERFGFPAPSGISRLTWLVSLF 180
 QY 181 GELSLVSATLEERKEQDMYKMTVCLETKKSPLSWIEKPGGLKRNRYLSFHFKSGSLEN 240
 DB 181 GELSLVSATLEERKEQDMYKMTVCLETKKSPLSWIEKPGGLKRNRYLSFHFKSGSLEN 240
 QY 241 VPNVGNKNIFLKDQNFVQKLLGFQSEKELAEKRRILHCLGLAEIEIQKYCCSRK 296
 DB 241 VPNVGNKNIFLKDQNFVQKLLGFQSEKELAEKRRILHCLGLAEIEIQKYCCSRK 296

RESULT 2
 BIEA_RAT STANDARD; PRT; 295 AA.
 AC P46844;
 DT 01-NOV-1995 (Rel. 32, Created)
 DT 01-NOV-1995 (Rel. 32, Last sequence update)
 DT 15-JUL-1999 (Rel. 38, Last annotation update)
 DE Biliiverdin reductase A precursor (EC 1.3.1.24) (Biliiverdin-IX alpha-
 DE reductase).
 DE BLVRA OR BLVR.
 GN Rattus norvegicus (Rat).
 OS Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxID=10116;
 RN [1]
 RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
 RC TISSUE=Kidney;
 RX MEDLINE=92156147; PubMed=1371282;
 RT Fakhrat H., Maines M.D.;
 RT "Expression and characterization of a cDNA for rat kidney biliiverdin

RT reductase. Evidence suggesting the liver and kidney enzymes are the
 RT same transcript product.";
 RL J. Biol. Chem. 267:4023-4029(1992).
 RN [2]
 RP MUTAGENESIS.
 RX MEDLINE=94291657; PubMed=8020496;
 RA McCoubrey W.K. Jr., Maines M.D.;
 RA "Site-directed mutagenesis of cysteine residues in biliiverdin
 RT reductase. Roles in substrate and cofactor binding.";
 RT Eur. J. Biochem. 222:597-603(1994).
 CC -|- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN; DISPLAYS TWO DISTINCT
 CC PH OPTIMA USING A DIFFERENT COFACTOR AT EACH PH: NADH AT THE LOWER
 CC PH 6.7-6.9 RANGE AND NADPH AT PH 8.5-8.7. NADPH, HOWEVER, IS THE
 CC PROBABLE COFACTOR IN BIOLOGICAL SYSTEMS.
 CC -|- CATALYTIC ACTIVITY: Biliirubin + NAD(P)(+) = biliiverdin + NAD(P)H.
 CC -|- COFACTOR: BINDS ONE ZINC ION.
 CC -|- PATHWAY: FINAL STEP IN HEME METABOLISM.
 CC -|- SUBUNIT: MONOMER (BY SIMILARITY).
 CC -|- SUBCELLULAR LOCATION: Cytoplasmic.
 CC -|- SIMILARITY: TO E.COLI YHHX.
 CC -----
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 CC -----
 CC EMBL; M81681; AAA40830.1; -;
 CC InterPro; IPR000683; GFO_IDH_MoCA.
 CC DR Pfam; PF01408; GFO_IDH_MoCA; 1.
 CC KW Oxidoreductase; NAD; NADP; Zinc.
 CC FT PROPEP 1 2
 CC FT CHAIN 3 295 BILIVERDIN REDUCTASE A.
 CC FT DOMAIN 11 16 POLY-VAL.
 CC FT METAL 279 279 ZINC (POTENTIAL).
 CC FT METAL 280 280 ZINC (POTENTIAL).
 CC FT METAL 291 291 ZINC (POTENTIAL).
 CC FT METAL 292 292 ZINC (POTENTIAL).
 CC FT METAL 73 73 C->A: LOSS OF ACTIVITY.
 CC FT MUTAGEN 280 280 C->A: REDUCED ACTIVITY.
 CC FT MUTAGEN 291 291 C->A: REDUCED ACTIVITY.
 CC SQ SEQUENCE 295 AA; 33565 MW; 219C8EA96C150588 CRC64;
 Query Match 82.7%; Score 1247.5; DB 1; Length 295;
 Best Local Similarity 82.8%; Pred. No. 1.2e-89;
 Matches 245; Conservative 26; Mismatches 24; Indels 1; Gaps 1;
 QY 1 MNPTEPRKFGVVVGVGRAGSVRMRLRNPHPSAFNLIGFVSRRELGSIDGVQOISLE 60
 DB 1 MDAEPRKFGVVVGVGRAGSVRLRLKDPK-SAAFNLIGFVSRRELGSIDGVQOISLE 59
 QY 61 DALSSQVEVAYICSSSSSHEDYIROFLNAGKHVLYEYPMTLSLAAQELWELAEQKGV 120
 DB 60 DALRSQEIDVAYICSSSSSHEDYIROFLQAGKHVLYEYPMTLSFAAAQELWELAAQGRV 119
 QY 121 LHEEHVELLMEEFAFLKKEVGVKDLKGLLFTAGPLEEERFGFPAPSGISRLTWLVSLF 180
 DB 120 LHEEHVELLMEEFEFLRREYVGLKGLSLRFTASPLEEERFGFPAPSGISRLTWLVSLF 179
 QY 181 GELSLVSATLEERKEQDMYKMTVCLETKKSPLSWIEKPGGLKRNRYLSFHFKSGSLEN 240
 DB 180 GELSLVSATLEERKEQDMYKMTVQLFTQNGLLSWIEKPGGLKRNRYLYNFQFTSSLEE 239
 QY 241 VPNVGNKNIFLKDQNFVQKLLGFQSEKELAEKRRILHCLGLAEIEIQKYCCSRK 296
 DB 240 VPSVGNKNIFLKDQNFVQKLLDQVSAEDLAAAEKRRIMHCLGLASDIQKLCQHK 295
 RESULT 3
 YHHX_ECOLI
 ID YHHX_ECOLI STANDARD; PRT; 345 AA.

```
AC P46853;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Putative oxidoreductase yhhx (EC 1.-.-.-).
GN YHHX OR B3440.
OS Escherichia coli.
OC Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
OC Escherichia.
OX NCBI_TaxID=562;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-K12 / MG1655;
RX MEDLINE=97426617; PubMed=9278503;
RA Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
RA Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
RA Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
RA Mau B., Shao Y.;
RT "The complete genome sequence of Escherichia coli K-12.";
RL Science 277:1453-1474 (1997).
RN [2]
RP IDENTIFICATION BY MASS SPECTROMETRY.
RX MEDLINE=99420866; PubMed=10493123;
RA Pounoukakis M., Takacs M.-F., Berndt P., Langen H., Takacs B.;
RT "Enrichment of low abundance proteins of Escherichia coli by
RT hydroxyapatite chromatography.";
RL Electrophoresis 20:2181-2195(1999).
CC -|- SIMILARITY: BELONGS TO THE YHHX FAMILY OF OXIDOREDUCTASES.
CC
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CC
CC EMBL; U18997; AAA58238.1; -.
CC EMBL; AE000420; AAC76465.1; -.
CC EcoGene; EG12944; yhhx.
CC InterPro; IPR000683; GFO_IDH_MOCA.
CC Pfam; PF01408; GFO_IDH_MOCA.C; 1.
CC Pfam; PF02894; GFO_IDH_MOCA.C; 1.
CC Oxidoreductase; Complete proteome.
SQ SEQUENCE 345 AA; 38765 MW; 31d73a62511c7f68 CRC64;

Query Match 10.0%; Score 151.5; DB 1; Length 345;
Best Local Similarity 31.3%; Pred. No. 0.00012;
Matches 42; Conservative 27; Mismatches 52; Indels 13; Gaps 4;

QY 59 LEDALSSQVEVAVICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAQKG 118
Db LDEVLNDPDKLVVYKTHADSHFEYKRALEAGKNVLVEKPFPTTQAQKELFALAKSG 116
QY 119 KVLHEEHVELLMERFAFLKEVWGKDLKGLLFTAG-----PLEERFGFP---AF-- 167
Db LTVTYPQNRREDFCSFLAKKAIESGKL--GEIVEVESHDFYRVPVATKGLPDGAFYG 174
QY 168 SGISRLTWLVSFLG 181
Db LGVHTMQIISFLG 188

RESULT 4
Y816_SYNY3
ID Y816_SYNY3 STANDARD; PRT; 371 AA.
AC P74041;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Hypothetical oxidoreductase sll0816 (EC 1.-.-.-).
GN SLL0816.
```

```
OS Synechocystis sp. (strain PCC 6803).
OC Bacteria; Cyanobacteria; Chroococcales; Synechocystis.
OX NCBI_TaxID=1148;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=97061201; PubMed=8905231;
RA Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,
RA Miyajima N., Hiroseawa M., Sugiyama M., Sasamoto S., Kimura T.,
RA Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Okumura S.,
RA Shimpō S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.,
RA Tabata S.;
RT "Sequence analysis of the genome of the unicellular cyanobacterium
RT Synechocystis sp. strain PCC6803. II. Sequence determination of the
RT entire genome and assignment of potential protein-coding regions.";
RL DNA Res 3:109-136(1996).
CC -|- SIMILARITY: BELONGS TO THE GFO_IDH/MOCA FAMILY.
CC
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CC
CC EMBL; D90911; BAA18116.1; -.
CC InterPro; IPR000683; GFO_IDH_MOCA.
CC InterPro; IPR004104; GFO_IDH_MOCA.C.
CC Pfam; PF01408; GFO_IDH_MOCA.C; 1.
CC Pfam; PF02894; GFO_IDH_MOCA.C; 1.
CC KW Hypothetical protein; Oxidoreductase; Complete proteome.
SQ SEQUENCE 371 AA; 41489 MW; BDEFE020D4B84BF6 CRC64;

Query Match 8.7%; Score 130.5; DB 1; Length 371;
Best Local Similarity 26.0%; Pred. No. 0.0056;
Matches 47; Conservative 33; Mismatches 56; Indels 45; Gaps 7;

QY 11 VVVGVRAGSVRMRLNPHPSAFLNLIGFVSRRRLGSDGVQOI-----SLEDA 62
Db VAVIGTGFQQAVHIPALQYHQQTQIA-----IYHRLAKAQEYAKSNLDLAYSNNLEEL 63
QY 63 LSSQVEVAVICSESSSHEDYIRQFLNAGKHVLYEYPMTLSLAAQELWELAQKGKVLH 122
Db LANDEVQAVTIASPPFLHYEMAKQAILAGKHVLEKPMPLRVEETIELYHLARQR----- 118
QY 123 EHVVELLME-EFAPLK-----KEVVGKDLKGLSLFTAGPLEERFGFPAPFSGISRLTWL 176
Db L---:---:---:---:---:---:---:---:---:---:---:---:---:---:---:---: 119 --EVQVIPDFEFVPAWQVYVALLGOGIL-----GOLK-----LIKVDWL 157
QY 177 V 177
Db 158 V 158

RESULT 5
YVAA_BACSU
ID YVAA_BACSU STANDARD; PRT; 358 AA.
AC O32223;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Hypothetical oxidoreductase in FHUO-OPUD intergenic region.
GN YVAA.
OS Bacillus subtilis.
OC Bacteria; Firmicutes; Bacillus/Clostridium group;
OC Bacillus/Staphylococcus group; Bacillus.
OX NCBI_TaxID=1423;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=168;
RA Kunst F., Ogasawara N., Yoshikawa H., Danchin A.;
RL Submitted (NOV-1997) to the EMBL/GenBank/DBJ databases.
CC -|- SIMILARITY: BELONGS TO THE YHHX FAMILY OF OXIDOREDUCTASES.
```


Best Local Similarity 21.98; Pred. No. 0.45;
Matches 47; Conservative 38; Mismatches 87; Indels 43; Caps 6;

QY	58	SLEDALSSQBEVAYICSESSSHEDYTRQFLNACKGHVLVEYPMTLSLAAAOELHELAEQK	117
DB	60	NLDEILLDPHVDYIDALLPAQFNADIVEKAVKAGPILKEPTIAANDQAIEVKIAEST	119
QY	118	GK-----VLHEEHVELLMEEFAFLKKEVVGGDKLLGSLFTAGPLEERF-	162
DB	120	PLPVGAENWLYLPCKIAEQEKGPPVAFTHNS--TGPFVTQNKYLTTTWRQKPETHG	178
QY	163	GFPAFSGISRLTDVLSFLFGSLSVSATLEBKE----DQYMKKMTCVLETEKKSPLSWIEE	218

DQ
179 GFESDGGVGRUWLSLSDGFGSGVALIKRVKRSRADDIVFRIVQD-
223

QY
219 KPGGLKNRYLSFHFHFKSGSLENVPNVGVNKNIFLK 253
::: : ::::

ID	RESULT	YMO1_RHIME	STANDARD;	PRT;	334 AA.
226	-----ANKREVIUSFTYGSAGF-----ATERSVFLK 230				
DD					
	9				
	YMO1_RHIME				
ID	YMO1_RHIME	STANDARD;	PRT;	334 AA.	
AC	P49305;				
DT	01-FEB-1996 (Rel. 33, Created)				
DT	01-FEB-1996 (Rel. 33, Last sequence update)				
DT	16-OCT-2001 (Rel. 40, Last annotation update)				
DE	Hypothetical 36.4 kDa protein in mocC-mocA intergenic region (ORF334).				
DE	Rhizobium meliloti (Sinorhizobium meliloti).				
OS	Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;				
OC	Rhizobiaceae; Sinorhizobium.				
OX	NCBI_TaxID=382;				
RN	[1]				

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 -!- SIMILARITY: BELONGS TO THE GFO/IDH/MOCA FAMILY.

 Mol. Gen. Genet. 245:11-24(1994).
 (mocABRC) genes Of Rhizobium meliloti L5-30.";
 RT "Molecular and genetic characterization of the rhizopine catabolism
 RA Rossbach S., Kulpa D.A., Rossbach U., de Bruijn F.J.;
 RX MEDLINE=95147842; PubMed=7845353;
 RC SIBALN=L5-30;

```

CC -----
DR EMBL: X78503; CAA55267.1; -.
DR InterPro: IPR000683; GFO_IDH_MOCA.
DR InterPro: IPR004104; GFO_IDH_MOCA_C.
DR Pfam: PF01408; GFO_IDH_MOCA: 1.
DR

```

Query Match 6.9%; Score 104; DB 1; Length 334;
 Best Local Similarity 22.2%; Pred. No. 0.56;
 Matches 48; Conservative 26; Mismatches 74; Indels 68; Gaps 7;
 KW Hypothetical protein; Oxidoreductase.
 SQ SEQUENCE 334 AA; 36408 MW; 1B26045491A5AFFC CRC64;

```

33 SSAPLNLIGVRSR-----RELGGSDGVQQLSLDELALSSQVEVATLCS 77
Db 25 SAGCLEVVATASRDLDRAAAATRFGRSGSYD-----BILADPEIEAVIPLPN 76
QY 78 SSHEDIYRQFLNAGKHYLVYPMPTLSLAAQELWELAEQKGVLHE----- 123
Db 77 HLHVHWAIRAAEAGKHYLCEKPLALDVEEISRLIDCRDRTGRRIRQIEAVMIRAHQWDEIF 136

```

Db 137 DIVASGEIGEVRAIQGVFTTEVNLDPKSIVNDASIGGGALYDLGVYPPIAARMVFAAEPR 196

RESULT 9

YMO1_RHIME	YMO1_RHIME	STANDARD;	PRT;	334 AA.
ID	AC	P49305;		
DT	DT	01-FEB-1996 (Rel. 33, Created)		
DT	DT	01-FEB-1996 (Rel. 33, Last sequence update)		
DT	DT	16-OCT-2001 (Rel. 40, Last annotation update)		
DE	DE	Hypochemical 36.4 kDa protein in mocc-moca intergenic region (ORF334).		
OS	OS	<i>Rhizobium meliloti</i> (Sinorhizobium meliloti).		
OC	OC	Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;		
OC	OC	Rhizobiaceae; Sinorhizobium.		
OX	OX	NCBI_taxid=382;		
		[1]		
RP	RP	SEQUENCE FROM N.A.		

SIBALINE=L5-30;
 MEDLINE=95147842; PubMed=7845353;
 Rossbach S., Kulpa D.A., Rossbach U., de Bruijn F.J.:
 "Molecular and genetic characterization of the rhizopine catabolism
 (mocABC) genes of Rhizobium meliloti L5-30.";
 Mol. Gen. Genet. 245:11-24(1994).
 -!- SIMILARITY: BELONGS TO THE GFO/IDH/MOCA FAMILY.

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```

CC -----
DR EMBL; J78503; CAA35267.1; -.
DR InterPro: IPR000683; GFO_IDH_MOGA.
DR InterPro: IPR004104; GFO_IDH_MOGA_C.
DR Pfam; PF01408; GFO_IDH_MOGA; 1.
DR Pfam; PF02894; GFO_IDH_MOGA_C; 1.
DR Hypochemical protein; Oxidoreductase.
DR SW SEQUENCE 334 AA: 36408 MW: 1B26045491A5AFEC CRC64:

```

Query Match	6.9%	Score 104:	DB 1:	Length 334:
Best Local Similarity	22.2%	Pred. No. 0.56:		
Matches 48:	Conservative	26:	Mismatches	74:
			Indels	68:
			Gaps	7:

```

33  SSAPFLNLIGVSR-----RELGSDTGVOQIISLEDALSSQEEVEVAYICSES 77
   | : | : | | | | | | | | | | | | | | | | | | | | | | | |
25  SAECLEVVATASRLDRARAATAFRGIRSGSYD-----EILADPEIEAVYIPLPN 76
   | : | : | | | | | | | | | | | | | | | | | | | | | | | |
78  SSHEDYTRQFLNKGKHLVVEYPMWTLSSAAQELWELAEQKGKVLHE----- 123
   | : | | | | | | | | | | | | | | | | | | | | | | | | | |
77  HLHWHAIRAAEAGKHKVCEKPLALDVEELSRLLDCRDRTRGRIQEAVMIRAHQPQWDEIF 136
   | : | : | | | | | | | | | | | | | | | | | | | | | | | |
124 -----EHWELMEGEFAFKKEVCVKDKLLKGSLLFTAG-----PUEEERFGF----- 164
   | : | | | | | | | | | | | | | | | | | | | | | | | | | |
137  DIVASGEIGEVRAIQGVFTEVYNLDPKSVINDASITGGGALVDLYGVYPTAAAMRAFAAEPEER 196
   | : | : | | | | | | | | | | | | | | | | | | | | | | | |

```


RESULT 13

GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd.

OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:58 ; Search time 31.4084 Seconds
(without alignments)
905.569 Million cell updates/sec

Title: US-09-606-129A-3

Perfect score: 1508

Sequence: 1 MNTPEPKFGVVGVVGVGRAG.....RILHCLGLAEIQKYCCSRK 296

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR_71.*

1: pir1.*

2: pir2.*

3: pir3.*

4: pir4.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1508	100.0	296	2 G02066	biliverdin reducta
2	1490	98.8	296	2 S62624	biliverdin reducta
3	1247.5	82.7	295	2 A42268	biliverdin reducta
4	222.5	14.8	322	2 AF2324	biliverdin reducta
5	217	14.4	328	2 S74645	biliverdin reducta
6	157.5	10.4	371	2 F90486	dehydrogenase, pro
7	151.5	10.0	345	2 C65140	hypothetical 38.8
8	150.5	10.0	345	2 AH0994	probable oxidoredu
9	147.5	9.8	345	2 A91165	probable regulator
10	147.5	9.8	345	2 A86011	probable regulator
11	143	9.5	393	2 D69803	hypothetical prote
12	141	9.4	318	1 H62916	3-chlorobenzoate-3
13	136.5	9.1	364	2 A71443	probable inositol
14	136.5	9.1	374	2 AE2337	hypothetical prote
15	134	8.9	356	2 AC2319	hypothetical prote
16	133	8.8	338	2 AE1119	oxidoreductase hom
17	132	8.8	360	2 B72359	lipopolysaccharide
18	130.5	8.7	368	2 T39296	Oxidoreductase - f
19	130.5	8.7	371	2 S75555	hypothetical prote
20	130	8.6	343	2 A11428	oxidoreductases ho
21	129.5	8.6	324	2 B86819	oxidoreductase ypj
22	124.5	8.3	369	2 T38428	hypothetical oxido
23	123.5	8.2	352	2 T42744	hypothetical prote
24	123.5	8.2	371	1 D71201	hypothetical prote
25	122.5	8.1	358	2 G70026	conserved hypotet
26	122	8.1	338	2 G70026	oxidoreductase hom
27	121.5	8.1	332	2 AH1479	oxidoreductase hom
28	121.5	8.1	324	2 AE3650	oxidoreductase (EC
29	121.5	8.1	346	2 F89784	hypothetical prote

30 121 8.0 341 2 A75025
31 119.5 7.9 328 2 H70014
32 119 7.9 343 2 AH1802
33 118.5 7.9 308 2 AH2713
34 118.5 7.9 334 2 E97495
35 117.5 7.8 357 2 A86658
36 116.5 7.7 323 2 AF1109
37 115 7.6 358 2 AC1345
38 115 7.6 358 2 AF1715
39 114.5 7.6 330 2 D98236
40 114.5 7.6 330 2 AG3049
41 114 7.6 360 2 A83004
42 112.5 7.5 390 2 AF3425
43 111.5 7.4 315 2 E75096
44 111.5 7.4 349 2 AB1715
45 111.5 7.4 349 2 AG1344

ALIGNMENTS

RESULT 1

G02066

biliverdin reductase (EC 1.3.1.24) - human

N:Alternate names: biliverdin IX-alpha reductase

C:Species: Homo sapiens (man)

C:Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 17-Jul-1998

C:Accession: G02066

R:Komuro, A.; Tobe, T.; Nakano, Y.; Yamaguchi, T.; Tomita, M.

submitted to the EMBL Data Library, August 1995

A:Reference number: H00768

A:Accession: G02066

A:Status: preliminary; translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-296 <COM>

A:Cross-references: EMBL:U34877; NID:g1143231; PID:g1143232

C:Keywords: oxidoreductase

Query Match 100.0%; Score 1508; DB 2; Length 296;

Best Local Similarity 100.0%; Pred. No. 1.1e-109; Indels 0; Gaps 0;
Matches 296; Conservative 0; Mismatches 0;

Qy 1 MNTPEPKFGVVGVVGVGRAGSVRMRLNPHPSAFNLNIGFVSRRRELGSIDGVQOISLE 60
|||||
Db 1 MNTPEPKFGVVGVVGVGRAGSVRMRLNPHPSAFNLNIGFVSRRRELGSIDGVQOISLE 60
Qy 61 DALSSQVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTSLAAQELWELAEQKGV 120
|||||
Db 61 DALSSQVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMTSLAAQELWELAEQKGV 120
Qy 121 LHEEHVELLMEEFAFLKKEVVGKDLLKGSLLFTAGPLEEERFGPAPFSGISRLTWLVSFL 180
|||||
Db 121 LHEEHVELLMEEFAFLKKEVVGKDLLKGSLLFTAGPLEEERFGPAPFSGISRLTWLVSFL 180
Qy 181 GELSIVSATLEEREDQYMKMTVCLETETKSPSLNIEKGPGLKRNRYLSFHFSGSLEN 240
|||||
Db 181 GELSIVSATLEEREDQYMKMTVCLETETKSPSLNIEKGPGLKRNRYLSFHFSGSLEN 240
Qy 241 VPNGVNNKIFLKQNTIFVQKLQGFSEKELAAEKRLHCLGLAEETQKYCCSRK 296
|||||
Db 241 VPNGVNNKIFLKQNTIFVQKLQGFSEKELAAEKRLHCLGLAEETQKYCCSRK 296

RESULT 2

S62624

biliverdin reductase (EC 1.3.1.24) - human

N:Alternate names: biliverdin IX-alpha reductase

C:Species: Homo sapiens (man)

C:Date: 28-Oct-1996 #sequence_revision 09-May-1997 #text_change 21-Jul-2000

C:Accession: S62624; S62622; S29736

R:Maines, M.D.; Polevoda, B.V.; Huang, T.J.; McCoubrey Jr., W.K.

Eur. J. Biochem. 235, 372-381, 1996
A:Title: Human biliverdin IX-alpha reductase is a zinc-metalloprotein. Characterizati

A:Reference number: S62622; MUID:96202961

A:Accession: S62624

A:Molecule type: mRNA

A:Residues: 1-296 <MA>

A:Cross-references: EMBL:X93086; NID:g1246748; PIDN:CAA63635.1; PID:g1246749

A:Accession: S62622

A:Molecule type: protein

A:Residues: 3-24,'X',26-27,'X',29-36;48-74;228-234;235-248 <MAF>

R:Maines, M.D.; Trakshel, G.M.

Arch. Biochem. Biophys. 300, 320-326, 1993

A:Title: Purification and characterization of human biliverdin reductase.

A:Reference number: S29736; MUID:9314333

A:Accession: S29736

A:Molecule type: protein

A:Residues: 3-24,'X',26-27,'X',29-36;48-74;228-234;235-248 <MAW>

A:Note: the sequence of peptide 1 from page 323 seems not to belong to this protein

C:Genetics:

A:Gene: BVR

C:Keywords: oxidoreductase

F:3-296/Product: biliverdin reductase IX-alpha #status experimental <MAT>

Query Match 98.8%; Score 1490; DB 2: Length 296;

Best Local Similarity 98.6%; Pred. No. 2.7e-108;

Matches 292; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 1 MNTPEPKFGVVVGVGRAGSVRMRLNRPSPSAFLNLIGFVSRRRLGSDGVQOISLE 60

Db 1 MNAEPERKFGVVVGVGRAGSVRMRLNRPSPSAFLNLIGFVSRRRLGSDGVQOISLE 60

Qy 61 DALSSQEVAYICSESSSHEDYIRQFLNAGKHVLYEPMYTLSLAAQELWELAEQKGV 120

Db 61 DALSSQEVAYICSESSSHEDYIRQFLNAGKHVLYEPMYTLSLAAQELWELAEQKGV 120

Qy 121 LHEHVELLMEEFAFLKKEVVGKDLGSLFTAGPLEEERFGFPAPSGISRLTWLSLF 180

Db 121 LHEHVELLMEEFAFLKKEVVGKDLGSLFTAGPLEEERFGFPAPSGISRLTWLSLF 180

Qy 181 GELSIVSATLEERKEDQYMKTVCTEKKSPLSWIEKGPGLKRNRYLSFHKSGSLEN 240

Db 181 GELSIVSATLEERKEDQYMKTVCTEKKSPLSWIEKGPGLKRNRYLSFHKSGSLEN 240

Qy 241 VPNGVGNKIFLKDQNFVQKLLGFSEKELAAEKKRILHCLGLAEETQKCCSRK 296

Db 241 VPNGVGNKIFLKDQNFVQKLLGFSEKELAAEKKRILHCLGLAEETQKCCSRK 296

RESULT 3

A42268

biliverdin reductase (EC 1.3.1.24) - rat

C:Species: Rattus norvegicus (Norway rat)

C:Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999

C:Accession: A42268

R:Fakhrai, H.; Maines, M.D.

J. Biol. Chem. 267, 4023-4029, 1992

A:Title: Expression and characterization of a cDNA for rat kidney biliverdin reductase.

A:Reference number: A42268; MUID:92156147

A:Accession: A42268

A:Status: preliminary; not compared with conceptual translation

A:Molecule type: nucleic acid; protein

A:Residues: 1-295 <FAB>

A:Cross-references: GB:M81681; NID:g203177; PIDN:AAA00830.1; PID:g203178

A:Experimental source: kidney

A:Note: sequence extracted from NCBI backbone (NCBIP:82800)

C:Keywords: liver; oxidoreductase

Query Match 82.7%; Score 1247.5; DB 2: Length 295;

Best Local Similarity 82.8%; Pred. No. 1.8e-89;

Matches 245; Conservative 26; Mismatches 24; Indels 1; Gaps 1;

Qy 1 MNTPEPKFGVVVGVGRAGSVRMRLNRPSPSAFLNLIGFVSRRRLGSDGVQOISLE 60

Db 1 MDAEPKRFKFGVVVGVGRAGSVRLRLDKDPR-SAAFLNLIGFVSRRRLGSLDEVRLQISLE 59

Qy 61 DALSSQEVAYICSESSSHEDYIRQFLNAGKHVLYEPMYTLSLAAQELWELAEQKGV 120

Db 60 DALRSQETDVAYICSESSSHEDYIRQFLQAGKHVLYEPMYTLSPFAAQELWELAAQGRV 119

Qy 121 LHERHVELLMEEFAFLKKEVVGKDLGSLFTAGPLEEERFGFPAPSGISRLTWLSLF 180

Db 120 LHERHVELLMEEFAFLKKEVVGKDLGSLFTAGPLEEERFGFPAPSGISRLTWLSLF 179

Qy 181 GELSIVSATLEERKEDQYMKTVCTEKKSPLSWIEKGPGLKRNRYLSFHKSGSLEN 240

Db 180 GELSIVSATLEERKEDQYMKTVCTEKKSPLSWIEKGPGLKRNRYLSFHKSGSLEN 239

Qy 241 VPNGVGNKIFLKDQNFVQKLLGFSEKELAAEKKRILHCLGLAEETQKCCSRK 296

Db 240 VPSGVGNKIFLKDQNFVQKLLGFSEKELAAEKKRILHCLGLAEETQKCCSRK 295

RESULT 4

AF2324

biliverdin reductase [imported] - Anabaena sp. (strain PCC 7120)

C:Species: Anabaena sp.

A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120

C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002

C:Accession: AF2324

R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Irigu

Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata

DNA Res. 8, 205-213, 2001

A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium

A:Reference number: AB1807; MUID:21595285; PMID:11759840

A:Accession: AF2324

A:Status: preliminary

A:Molecule type: DNA

A:Residues: 1-322 <KUR>

A:Cross-references: GB:BA000019; PIDN:BA075848.1; PID:g17133284; GSPDB:GN00179

A:Experimental source: strain PCC 7120

C:Genetics:

A:Gene: bvdR

Query Match 14.8%; Score 222.5; DB 2: Length 322;

Best Local Similarity 26.0%; Pred. No. 8.3e-10;

Matches 87; Conservative 52; Mismatches 110; Indels 85; Gaps 15;

Qy 13 VVGVRAGSVRMRLNRPSPSAFL-----NLIG-----FVSRRELGSIDGVQO 56

Db 3 IVGTGYAAKL-----AEAFLEDRSHLVAIAGSKLERTOTFAQAYQAEVITGWQO 53

Qy 57 ISLEDALSSQEVAYICSESSSHEDYIRQFLNAGKHVLYEPMYTLSLAAQELWELAEQ 116

Db 54 L-----VEREDIDLVICTINRQHGAIARAALTAGKHVIVEYPLSVDLTEAEELIALAKT 108

Qy 117 KGKVLHEHVELLMEEFAFLKKEVVGKDLGSLFF-----TAGP-----LEERF 162

Db 109 QOKLLHVEHIELLGLHQAALK-----QNLKVGHLFVRYSTINPQNPAPRKWTYNHAMF 163

Qy 163 GFPAFSGISRLTWLSLFGELSVATLEERK-----EQYMKMTVCLETERKSPLSW--- 215

Db 164 GFPLIGALSRLHRLTDLFGKVFVNC--HQRYWEIEEYQTCFCM-----TQLCFTSGL 216

Qy 216 -----IEKGPGL-KRNRYLSFHKSGSL-----ENVP-NVGWNKINFLKQDN 256

Db 217 LAQVIYKGSLSMQPERKFEVHGNGALIFDGTGFFIQSGESTPVELTTRRGLFAKDT 276

Qy 257 IFQKLLGQFSEKELAAEKKRILHCLGLAEIOK 290

Db 277 MWLDHI---FDGAPLYVTPPEESLYTLRVADAQR 307

RESULT 5

S74645

biliverdin reductase (EC 1.3.1.24) - Synechocystis sp. (strain PCC 6803)

N:Alternate names: hypothetical protein sir1784

C:Species: Synechocystis sp.

A:Variety: PCC 6803

Db	134	EKKGKIVGVTYGFSGNQMLLQNRAMTEQGMIG-DIRVVDLQTHGFCATDEGEKISAAQK	192
Qy	165	----PAFSGSRSLTWLSLFGELGSYSVLAERKEQDYMKTVCLTEKKKSP-----SWI	216
Db	193	WRVDPATAGPS-----FVLGDLS-----THTYYSQSLIMPMMKIKELLCDROSFV	237
Qy	217	EKGPGGLKRNRYLSFHKFSGSLSENVNPGVN	247
Db	238	GSRAP-LEDNAHVLMMHYENGAVGTMMTSSIN	267

RESULT 12
H69216
3-chlorobenzoate-3,4-dioxygenase related protein - Methanobacterium thermoautotrophicum
C:Species: Methanobacterium thermoautotrophicum
C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 21-Jul-2000
C:Accession: H69216
R:Smith, D.R.; Doucette-Stamm, L.A.; Deloughery, C.; Lee, H.; Dubois, J.; Aldredge, T.;
; Qiu, D.; Spadafora, R.; Vicaire, R.; Wang, Y.; Wierzbowski, J.; Gibson, R.; Jiواني, N.
ki, S.; Church, G.M.; Daniels, C.J.; Mao, J.; Rice, P.; Noelling, J.; Reeve, J.N.
J. Bacteriol. 179, 7135-7155, 1997
A:Title: Complete genome sequence of Methanobacterium thermoautotrophicum Delta H: funct
A:Reference number: A69000; MUID:98037514
A:Accession: H69216
A:Status: preliminary; nucleic acid sequence not shown; translation not shown
A:Molecule type: DNA
A:Residues: 1-318 <MTH>
A:Cross-references: GB:AE000863; GB:AE000666; PIDN:g2621956; PIDN:AAB85373.1; PID:g262196
A:Experimental source: strain Delta H
C:Genetics:
A:Gene: MTH875
A:Start codon: TTG
C:Superfamily: Streptomycetes griseus stri protein

Query Match	9.4%	Score 141;	DB 1;	Length 318;
Best Local Similarity	20.1%	Presd. No. 0.0018;		
Matches	56;	Conservative	49;	Mismatches 90; Indels 84; Gaps 8;
Qy	7	RKFGVVVVGVCRAGSVRMR---	DLRNPSPSAFLNLGTFVSRRRLGSGIDGQQQISLEDAL	63
Db	2	ROIIVGIVGAMGYNHARVYRLKNNAN-LMAVSDIMKGTLOKVANKYDVTGVYDYDENLL	60	
Qy	64	SSQVEVAYICGSESSHEDYIRQFLNAGKHVLVPEPMTLSLAAAQELWELAEQKGKVLHE	123	
Db	61	EIPEIVSVSCVPTHHHNVVNDMALEHDKHVLVEKPTAFTEEAEDMVMTARKKGLKGT	120	
Qy	124	ERVE-----LLMEEFALKEVVG-----	KDL-----	145
Db	121	GHVERFNPVAKOKALELINDVIGDVVSASAKRVGFPFPRIKDVGVTIDLATHLDVMHYL	180	
Qy	146	-----LKGSLL-----	FTAGPLEERFGFPFAGSIRLTLW----	176
Db	181	FSEPVAEVYAVMGSILEKCEVEDHAEIMTKFKSG-----	ITGILEVNMLTPYKR	229
Qy	177	--VSLFELSLSVATLEERKEDQYKMKTVLCLETEKKSP	L	213
Db	230	RKLATITGDIINVDYIDORLDVYVGKFAQDVDIRHEEP	L	268

RESULT 13
A71443
probable Inositol 2-dehydrogenase - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
A:Variety: columbilla
C:Date: 03-Aug-1998 #sequence_revision 03-Aug-1998 #text_change 05-Dec-1998
C:Accession: A71443
R:Bevan, M.; Bancroft, I.; Bent, E.; Love, K.; Goodman, H.; Dean, C.; Bergkamp, R.; Dirks
P.; Wedler, H.; Wedler, E.; Wambutt, R.; Weitzenecker, T.; Pohl, T.M.; Terry, N.; Giel
avanagh, T.; Hempel, S.; Kotter, P.; Entian, K.D.; Rieger, M.; Schaeffer, M.; Funk, B.
Nature 391, 485-488, 1998
A:Authors: Mueller-Auer, S.; Silvey, M.; James, R.; Montfort, A.; Pons, A.; Puigdomenech
erhoff, A.; Moores, T.; Jones, J.D.G.; Eneva, T.; Palme, K.; Benes, V.; Rechman, S.; Ans

C.: Chalcid, N.
A:Title: Analysis of 1.9 Mb of contiguous sequence from chromosome 4 of Arabidopsis t
A:Reference number: A71400; MUID: 98121113
A:Accession: A71443
A:Status: preliminary; nucleic acid sequence not shown; translation not shown
A:Molecule type: DNA
A:Residues: 1-364 <REV>
A:Cross-references: GB:297343; NID:g2245073; PID:e327057; PID:g2245096
C:Genetics:
A:Map position: 4COP9-4G3845

Query Match	9.1%	Score 136.5;	DB 2;	Length 364;
Best Local Similarity	23.1%;	Pred. No. 0.0047;		
Matches	61;	Conservative 49;	Mismatches 89;	Indels 65; Gaps 13;
Qy	8	KFGVVVVG-VCRAGSVRMRLR-----NPHPSAFNLN-----IGFVSRELCSI	51	
Db	11	KYGVIGMMGREHLINLHURDOGLAVVCIADPPHPSQLLAIELAOSFGW----ELKVF	66	
Qy	52	DGVOQISLEDAALSQOEVEVAYICSESSHEDYIRQFLNAGK--HVLYEYPMTLSLAAQE	109	
Db	67	SG-----HEEUKLSELCDVIUVSSPNMTHOILMDIINSKPHVLVKEPKLTCTVADCKQ	121	
Qy	110	LWELAEOKGYLVHEHVEL-LWEFAFLKKEWGKDLLGSLLTAGPLEERGFAPFS	168	
Db	122	VLEAAKRSDMVVQGLERYMPVPVAKLIEQVKGRDP--GNWKVA---IRCHRPFLVKV	177	
Qy	169	GISR/L-TW-----LVSLFEGLSLSATLEERKEDQOYMKTVCLETEKSPISWI	216	
Db	178	GLNKMLWLTVLEKCCHFDDLRLRFAGAN-----PVCVMASGMGDVNHK	220	
Qy	217	EE----KGPGUKRNRYLSFHFKSG	236	
Db	221	DEVYGGKVPIIDINAYVLIIEFDNG	244	

RESULT 14
AE2337 hypothetical protein all14252 [imported] - Anabaena sp. (strain PCC 7120)
C:Species: Anabaena sp.
A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
C:Accession: AE2337
R:Kakazaki, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Irigoien, J.M.; Tabatake, K.; Shimizu, M.; Takazawa, M.; Sugimoto, M.; Taniguchi, H.; Tabatake, K. DNA Res. 8, 205-213, 2001
A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena sp. Strain PCC 7120
A:Reference number: AB1807; MUID:21595285; PMID:11759840
A:Accession: AE2337
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-374 <KUR>
A:Cross-references: CB:BA000019; PIDN:BAH75951.1; PID:g17133387; GSPDB:GN00179
A:Experimental source: strain PCC 7120
C:Genetics:
A:Gene: all14252

Query Match	9.1%	Score 136.5;	DB 2;	Length 374;
Best Local Similarity	21.8%;	Pred. No. 0.0049;		
Matches 49; Conservative	38;	Mismatches 77;	Indels 61;	Gaps 16;
Qy	8	KFGVVVGVGRAGSRMRDLRNPSSAFNLIGVSRRRLGSDGVQOI-----SL 59		
Dd	11	KIGVAICTGFQKVHPAPQAHHRTD----IVAIYHRDIHKAKIAEANNIPHAFTI 65		
Qy	60	EDALSSQSEVAYTCSSSSHEDYTROPNQKHKVLVEYPMPTLSLAAQELMELAEOKGK 119		
Dd	66	ADTVNLPVQAVSIATPPFLHYEMGKTVLQAGKHLLLEKPTVLTNAEAQELYQLAKKGCV 125		
Qy	120	VLHEEHVELLMEEFAFLKEVVVGDKLLKGLSLFTTAGPLREERFFGPATSGISRUWLVSL 179		
Dd	126	IATVDVF-----EFFRVPAWLQFALLSS-----GVYGTPRIIDRMGLSS 165		

```
Qy 180 FGEISLVSATLEERKEQYMKMTVCLETETKSKPLSWI--EEKGPG 222
      : |
      | : | | |
Db 166 RADTS-----RPNWYSSKEKGG 184

RESULT 15
AC2319
hypothetical protein all4106 [imported] - Anabaena sp. (strain PCC 7120)
C:Species: Anabaena sp.
A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
C:Date: 14-Dec-2001 #sequence,revision 14-Dec-2001 #text_change 11-Jan-2002
C:Accession: AC2319
R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriiguchi,
Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Tabata, S.
DNA Res. 8, 205-213, 2001
A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena
A:Reference number: AB1807; MUID:21595285; PMID:11759840
A:Accession: AC2319
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-356 <KUR>
A:Cross-references: GB:BA000019; PIDN:BA075805.1; PID:g17133241; GSPDB:GN00179
A:Experimental source: strain PCC 7120
C:Genetics:
A:Gene: all4106

Query Match      8.9%  Score 134;  DB 2;  Length 356;
Best Local Similarity 24.9%; Pred. No. 0.0071;
Matches 44; Conservative 28; Mismatches 53; Indels 52; Gaps 5;

Qy 11 VVVGVGRAGSVRMRD-----LRNHPSSAF-----NLIGFVSRRRLGS 50
      : | | | | | : : : : : : : : : : : : : : : : : : :
Db 4 IAVIGVGRGWVHLRNFLAHPQAEVVAIVDPHPERLAVVKKQFKLAENVLLTTDWSDLQK 63

Qy 51 IDGVQQISLEDALSSQEEVEVAYICSESSSHEDYIRQFLNAGKHVLYEYPMFTLSLAAQEL 110
      : | : : : : : : : : : : : : : : : : : :
Db 64 VPGLTAVA-----IATPATYHALIKDALAQGYHVLAEKPLTLDPEVCEQL 109

Qy 111 WELAEQKGVLEHREHVELL---MEEFAPLKKEVVGKDLLKGSLLFTAGPLEEERFGF 164
      : | | | : : | : | : | : | : | : | : | : | : | : | :
Db 110 QLAEQQLILMDVHTYLFHPAVEE-----GQTVVQAGKIGELRIGY 151
```

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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:44:48 ; Search time 24.746 Seconds
(without alignments)
292.168 Million cell updates/sec

Title: us-09-606-129a-3
Perfect score: 1508
Sequence: 1 MNTPEPRKGVVGVGVGRAG.....RILHCLGLAEIQRKYCCSRK 296

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 2442594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep.*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep.*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep.*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep.*
5: /cgn2_6/ptodata/1/iaa/PCRUS_COMB.pep.*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	123.5	8.2	315	4	US-09-720-817-3
2	123.5	8.2	315	4	US-09-720-817-6
3	122.5	8.1	280	4	US-09-720-817-1
4	112	7.4	229	4	US-08-936-165A-519
5	112	7.4	332	4	US-09-036-987A-15
6	112	7.4	332	4	US-09-370-700-15
7	97	6.4	988	2	US-08-286-819A-19
8	97	6.4	988	3	US-08-980-357-19
9	92.5	6.1	351	1	US-08-402-217A-2
10	92.5	6.1	351	1	US-08-700-178-2
11	92.5	6.1	351	3	US-08-995-654-2
12	91	6.0	264	2	US-07-857-224B-9
13	90	6.0	531	3	US-08-886-886-15
14	89	5.9	759	1	US-08-676-967-1
15	89	5.9	759	1	US-08-676-974-1
16	89	5.9	759	2	US-09-098-487-1
17	86.5	5.7	1199	4	US-09-208-742-2
18	86.5	5.7	1199	4	US-09-332-295-4
19	85.5	5.7	514	2	US-08-960-022-14
20	84.5	5.6	487	2	US-08-712-709-8
21	84.5	5.6	487	3	US-09-111-444-8
22	84.5	5.6	487	4	US-09-541-228-8
23	84	5.6	1205	4	US-09-330-330-1
24	83	5.5	573	2	US-08-745-934-4
25	83	5.5	573	4	US-09-147-009-7
26	82.5	5.5	270	2	US-08-852-743-5
27	82.5	5.5	270	3	US-09-185-370-5

28	81.5	5.4	323	1	US-07-992-827D-1	Sequence 1, Appl
29	81.5	5.4	323	1	US-08-216-593-1	Sequence 1, Appl
30	81.5	5.4	323	5	PCT-US93-12380-1	Sequence 1, Appl
31	81	5.4	572	2	US-08-745-934-3	Sequence 2, Appl
32	81	5.4	572	4	US-09-147-009-6	Sequence 6, Appl
33	81	5.4	1261	3	US-09-080-855-2	Sequence 2, Appl
34	80	5.3	551	4	US-09-503-391-2	Sequence 2, Appl
35	80	5.3	551	4	US-09-503-391-4	Sequence 2, Appl
36	80	5.3	2930	4	US-09-417-822-2	Sequence 2, Appl
37	79.5	5.3	1057	4	US-09-541-782-10	Sequence 10, Appl
38	79	5.2	524	3	US-08-557-210A-3	Sequence 3, Appl
39	79	5.2	528	2	US-08-876-882-2	Sequence 2, Appl
40	78.5	5.2	539	3	US-08-557-210A-4	Sequence 4, Appl
41	78.5	5.2	539	3	US-08-557-210A-5	Sequence 5, Appl
42	78.5	5.2	988	3	US-08-851-843A-69	Sequence 69, Appl
43	78.5	5.2	988	4	US-08-974-549A-112	Sequence 112, App
44	78.5	5.2	988	4	US-08-854-050-69	Sequence 69, Appl
45	78.5	5.2	988	4	US-09-430-323-69	Sequence 69, Appl

ALIGNMENTS

RESULT 1
US-09-720-817-3
; Sequence 3, Application US/09720817
; Patent No. 6340579
; GENERAL INFORMATION:
; APPLICANT: Masai, Ei-ji
; APPLICANT: Fukuda, Masao
; APPLICANT: Katayama, Yoshihiro
; APPLICANT: Nishikawa, Seiji
; APPLICANT: Hotta, Yasushi
; TITLE OF INVENTION: NOVEL GENE AND TRANSFORMANT CARRYING THE SAME
; FILE REFERENCE: 200966050XPCT
; CURRENT APPLICATION NUMBER: US/09/720,817
; CURRENT FILING DATE: 2001-06-04
; PRIOR APPLICATION NUMBER: JAPAN 10/203200
; PRIOR FILING DATE: 1998-07-17
; PRIOR APPLICATION NUMBER: PCT/JP99/03410
; PRIOR FILING DATE: 1999-06-25
; NUMBER OF SEQ ID NOS: 10
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 3
; LENGTH: 315
; TYPE: PRT
; ORGANISM: Sphingomonas sp. CR-0310201
US-09-720-817-3

Query Match	8.2%	Score 123.5	DB 4	Length 315
Best Local Similarity	20.0%	Pred No. 6.9e-05		
Matches	66	Conservative	53	Mismatches 136
				Indels 75
				Gaps 12
Qy	11	VVVGVGRAGSVRRDLRNPSPSAFLNIGFVSRR-----ELGSDGVQVQ--ISLEDAL 63		
Db	3	IALAGAGAFGEKHLGLKNIDG-----VEIVSIISRKAAEAAVAAKYGAKHSGTDLSEAL 58		
Qy	64	SSQVEVAYTCSESSSHEDYIRQFLNAGKHLVPEYPTLSLAAAOELWELAEQKVLHE 123		
Db	59	ARDDVDVAVILCTPTQMHAEQAIAACNAGKHQVVEIPLADSWADAEAVMKKSOETGLVCMV 118		
Qy	124	EHVELLMEEFAFLKKEVYGKLLGKLSLLTAGLPLEERFEGFPF-----SG 169		
Db	119	GHTRRFNPSHQYIHNKIV-----AGELAIQMDVOTYFFRRKNNNAKGEPSW 166		
Qy	170	ISRLTW-----LVSLFG-----ELSVSATLEERKEDQYMKMTVCLE 206		
Db	167	TDLLHWHHAHTVDLFAYQAGKIYQANAVQGPPIHPELGIAIDMSIOLKSETGAICTLSLS 226		
Qy	207	TEKSPSL-----WTEKGPGLKRNRYLSFHFKSGSL-----NVPNGVKNKN-IFLKDQNFV 259		
Db	227	FNDGPLGTFRYICDNGTWIARYDDL-----VTGKEPVDVSKVDVSMNGIELQDREFIA 282		

TELEPHONE: 610-270-4478
TELEFAX: 610-270-5090
TELEX:
INFORMATION FOR SEQ ID NO: 519:
SEQUENCE CHARACTERISTICS:
LENGTH: 229 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: Protein
US-08-936-165A-519

Query Match 7.4%; Score 112; DB 4; Length 229;
Best Local Similarity 22.8%; Pred. No. 0.0007;
Matches 39; Conservative 30; Mismatches 70; Indels 32; Gaps 5;
Qy 63 LSSEVEVAYICSSSSSHEDYIRFLNAGKHVLVEYPTMLSLAAQELWELAEQKGVHL 122
Db 54 LKDDTIDVHVCTPNDSHCEITVAGLHAGKHVMCEKPMKTTAEQAQKMTIDTAKSTGKKLT 113
Qy 123 EHVELLMEEFALFKKEVGVGKDLKGSLLF-----TAGPL--EEERFGFPAPS 168
Db 114 IGYNRRFPDSQFLHQAQRGL--GDIYFGKAHAIRRAVPTWGVFLNEAQQGGPLID 171
Qy 169 ----GISRLTWLVSLFSGELSVLSATLEERKEDQYMKMTVCLETEKKSPLSW 215
Db 172 IGTHALDLTLWMDNYEPESVMGSTFHK-----LNKQHDAPNAW 210

RESULT 5
US-09-036-987A-15
Sequence 15, Application US/09036987A
Patent No. 6143526
GENERAL INFORMATION:
APPLICANT: Baltz, Richard H.
APPLICANT: Broughton, Mary C.
APPLICANT: Crawford, Kathryn P.
APPLICANT: Madduri, Krishnamurthy
APPLICANT: Merlo, Donald J.
APPLICANT: Treadway, Patti J.
APPLICANT: Turner, Jan R.
APPLICANT: Waldron, Clive
TITLE OF INVENTION: Biosynthetic Genes For Spinosyn Insecticide
NUMBER OF SEQUENCES: 39
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dow Agrosciences LLC Patent Department
STREET: 9330 Zionsville Road
CITY: Indianapolis
STATE: Indiana
COUNTRY: USA
ZIP: 46268
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/036,987A
FILING DATE: 09-MAR-1998
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Stuart, Donald R.
REGISTRATION NUMBER: 28,479
REFERENCE/DOCKET NUMBER: 50,608
TELECOMMUNICATION INFORMATION:
TELEPHONE: (317)337-4816
TELEFAX: (317)337-4847
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 332 amino acids
TYPE: amino acid
TOPOLOGY: linear

MOLECULE TYPE: protein
US-09-036-987A-15

Query Match 7.4%; Score 112; DB 4; Length 332;
Best Local Similarity 24.5%; Pred. No. 0.0012;
Matches 47; Conservative 34; Mismatches 69; Indels 42; Gaps 7;
Qy 42 FVSRRELGSIDGVOOISLEDALSSQEVAVYICSSSSSHEDYIRQFLNAGKHVLVEYPTM 101
Db 46 FAARFECEAVLGYORL-----LERPDIDAVYVPLPPGHHAEWIGKALEADKHVLAERPLT 100
Qy 102 LSLAAQELWELAEQKGVHLHEEHVELLMEEFAFLKKEVGVGKDLKGSLLFTAGPLEEER 161
Db 101 TTASDARLVGLARRKNLLRENVL-----FLHGHHDVVVDLLQ-----SGEIGELR 148
Qy 162 -----FGPPAF--SGISRLTWLV-----LFGELSLSVATLEERKEDQ 197
Db 149 EFTAVFGIPPLPDTDIRYRTELGGGALLDIGVYPARAARHFLGLPLTVLGASSHEAQESG 208
Qy 198 Y-MKMTVCLETE 208
Db 209 VDLSGSVLLQSE 220

RESULT 6
US-09-370-700-15
Sequence 15, Application US/09370700
Patent No. 6274350
GENERAL INFORMATION:
APPLICANT: Baltz, Richard H.
APPLICANT: Broughton, Mary C.
APPLICANT: Crawford, Kathryn P.
APPLICANT: Madduri, Krishnamurthy
APPLICANT: Treadway, Patti J.
APPLICANT: Turner, Jan R.
APPLICANT: Waldron, Clive
TITLE OF INVENTION: Biosynthetic Genes For Spinosyn Insecticide
FILE REFERENCE: 50489 DIV1
CURRENT APPLICATION NUMBER: US/09/370,700
CURRENT FILING DATE: 1999-08-09
EARLIER APPLICATION NUMBER: US 09/36987
EARLIER FILING DATE: 1998-03-09
NUMBER OF SEQ ID NOS: 39
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 15
LENGTH: 332
TYPE: PRT
ORGANISM: Saccharopolyspora spinosa
US-09-370-700-15

Query Match 7.4%; Score 112; DB 4; Length 332;
Best Local Similarity 24.5%; Pred. No. 0.0012;
Matches 47; Conservative 34; Mismatches 69; Indels 42; Gaps 7;
Qy 42 FVSRRELGSIDGVOOISLEDALSSQEVAVYICSSSSSHEDYIRQFLNAGKHVLVEYPTM 101
Db 46 FAARFECEAVLGYORL-----LERPDIDAVYVPLPPGHHAEWIGKALEADKHVLAERPLT 100
Qy 102 LSLAAQELWELAEQKGVHLHEEHVELLMEEFAFLKKEVGVGKDLKGSLLFTAGPLEEER 161
Db 101 TTASDARLVGLARRKNLLRENVL-----FLHGHHDVVVDLLQ-----SGEIGELR 148
Qy 162 -----FGPPAF--SGISRLTWLV-----LFGELSLSVATLEERKEDQ 197
Db 149 EFTAVFGIPPLPDTDIRYRTELGGGALLDIGVYPARAARHFLGLPLTVLGASSHEAQESG 208
Qy 198 Y-MKMTVCLETE 208
Db 209 VDLSGSVLLQSE 220

RESULT 7
US-08-286-819A-19

[illegible]

```

Query Match          6.18; Score 92.5; DB 1; Length 351;
Best Local Similarity 25.18; Pred. No. 0.15;
Matches 72; Conservative 39; Mismatches 85; Indels 91; Gaps 15;

QY  54 VQOISLE-DALLSQBQVEVA-----YICS-----ESSSHEDIYRQFLNACKGHVIVEYPM 100
      :|||: |||: |||:|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
Db   18 LQQELQIDSLLQQOKBELSSUHKLCFSQBEMAKENLFEEELKQTLD----- 66
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
QY  101 TLSLAAQAQLWELAQKGVLHEHVVELLMEEFAFLKKKEVVGK--DILKGSLLFT-AGPL 157
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
Db   67 --ELDKLOQKEEAERLVKQL-EEBAKSRAEELKLLEEKLGKAELKSAHAHTQATLL 123
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
QY  158 EEERPG-----FPFSGISRITWLVSFLFGELSUSVATLEER----- 193
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
Db   124 LEKYDSMVQSLEDVTQAQFESYKALT--ASETIDLKLENSSLQEBKVAKAGNAEDVQHQI 181
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
QY  194 -----KEDQYMKMTVCLETEKKSPLSWTEEEKGPGGLKRNRNYLSFHFKSGSLENVPNVGVNK 248
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
Db   182 LATSSNQEYRMULDQT--KSALKETEIK-----EITSVFQKITDLQNQ----- 226
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
QY  249 NIFLKDNQIFVKLL---GFQSEKELAAAEKKRIHLCHLGLAEETOKY 291
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:
Db   227 ---LQOEEDFRKQLEDEGRKAENTAE-----LTEEINKW 262
      :|||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||: |||:

RESULT 11
US-08-995-654-2
; Sequence 2, Application US/08995654
; Patent No. 6025138
; GENERAL INFORMATION:
; APPLICANT: Hawkins, Phillip R.
; APPLICANT: Wilde, Craig
; APPLICANT: Seilhamer, Jeffrey
; TITLE OF INVENTION: HVALJRONAN RECEPTOR EXPRESSED IN HUMAN
; TITLE OF INVENTION: UMBILICAL VEIN ENDOTHELIAL CELLS
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESSES:
; ADDRESSEE: Incyte Pharmaceuticals, Inc.
; STREET: 3174 Porter Dr.
; CITY: Palo Alto
; STATE: CA
; COUNTRY: USA
; ZIP: 94304
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM Compatible
; OPERATING SYSTEM: Windows
; SOFTWARE: FASTSEQ for Windows Version 2.0
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/995,654
; FILING DATE: December 22, 1997
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/700,178
; FILING DATE: August 20, 1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/402,217
; FILING DATE: March 10, 1995
; ATTORNEY/AGENT INFORMATION:
; NAME: Billings, Lucy J.
; REGISTRATION NUMBER: 36,749
; REFERENCE/DOCKET NUMBER: PF-0028-2 DIV
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650-855-0555
; TELEFAX: 650-845-4166
; TELEX:
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 351 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
;
US-08-995-654-2

```

```

Query Match          6.1%; Score 92.5; DB 3; Length 351;
Best Local Similarity 25.1%; Pred. No. 0.15;
Matches 72; Conservative 39; Mismatches 85; Indels 91; Gaps

Qy  54 VQOISLE-DALSSQOEVEA-----YICS-----BSSSHEDYIROFLNAGKHVLYEYPM 100
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Db  18 LQKELQIDSLQOERKLSLHQLKCSFOEMAKENKLFEEELKOTLD----- 66
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Qy  101 TLSIAAAQELWELAAEQKGYLHEEHVELLMEEFAFLKKEVVGK--DLLKGSLLFT--AGPL 157
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Db  67 --ELDKLQQKEQAERLVKQL-BEEAKSRAEELKLLLEELKLGKEAELEKSSAAHTQATLL 123
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Qy  158 EERFG-----PPAFSGISRLTWLWLFGEELSLVSATLEER----- 193
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Db  124 LEEKYDSMVOSLEDVTAQFESYKALT--ASEIEDKLLENSLQKEKVAKAGKNAEDVQHQI 181
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Qy  194 ----KEDQYMKMTVCILETEKKSPLSWIEPKGPGLKRNRYLSPHFKSGSLGNVPNVGVNK 248
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Db  182 LATESSNQEVRLMDIQT--KSALEKTEIK-----EITVSPQLKITQLNQ----- 226
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Qy  249 NIFLKDQNIIVQKLL-----QGFSEKELAAEKRIHLHCLGLAEIOKY 291
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||
Db  227 --LKQKEEDFRQKLEDEGRKAKEKNTAE-----LTEINKW 262
      :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :|| :||

RESULT 12
US-07-857-224B-9
; Sequence 9, Application US/07857224B
; Patent No. 5958784
; GENERAL INFORMATION:
; APPLICANT: Benner, Steven A.
; TITLE OF INVENTION: Predicting Folded Structures of Proteins
; NUMBER OF SEQUENCES: 114
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Steven A. Benner
; STREET: Hadlaubstrasse 151
; CITY: Zurich
; STATE: none
; COUNTRY: Switzerland
; ZIP: (note: this is an international post code) CH-8092
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch diskette, 1.4 Mb storage
; COMPUTER: Apple Macintosh
; OPERATING SYSTEM: Macintosh 7.0
; SOFTWARE: Microsoft Word
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/857,224B
; FILING DATE: 03/25/92
; CLASSIFICATION: 436
; PRIOR APPLICATION DATA: none
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (International) 41 1 632 2830
; TELEFAX: (International) 41 1 262 2437
; TELEX: none
; INFORMATION FOR SEQ ID NO: 9:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 264
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE:
; DESCRIPTION: protein
; ORIGINAL SOURCE:
; ORGANISM: bovine
; FEATURE: Protein kinase; Table 8 Column 9
; PUBLICATION INFORMATION:
; AUTHORS:
; AUTHORS: Hanks, S. K.
; AUTHORS: Quinn, A. M.
; AUTHORS: Hunter, T.
; TITLE: The protein kinase family
; JOURNAL: Science
; VOLUME: 241

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:40:53 ; Search time 67.0997 Seconds
(without alignments)
489.985 Million cell updates/sec

Title: US-09-606-129a-3

Perfect score: 1508

Sequence: 1 MNTPEPKFGVVVGVGRAG.....RILHCLGLAEIQKYCCSRK 296

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0

Maximum DB seq length: 20000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

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1: /SIDSL/gcgdata/geneseq/geneseq-emb1/AA1980.DAT.*
2: /SIDSL/gcgdata/geneseq/geneseq-emb1/AA1981.DAT.*
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19: /SIDSL/gcgdata/geneseq/geneseq-emb1/AA1998.DAT.*
20: /SIDSL/gcgdata/geneseq/geneseq-emb1/AA1999.DAT.*
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22: /SIDSL/gcgdata/geneseq/geneseq-emb1/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	225	14.9	60	21 AAG02024	Human secreted pro
2	182	12.1	63	21 AAG02023	Human secreted pro
3	151.5	10.0	434	22 ABG21584	Novel human diagno
4	147	9.7	241	22 ABG21582	Novel human diagno
5	147	9.7	389	22 ABG29497	Novel human diagno
6	130.5	8.7	335	22 ABG60024	Drosophila melanog
7	124.5	8.3	226	22 AAU49252	Propionibacterium
8	123.5	8.2	175	18 AAU28328	Amino acid sequenc
9	123.5	8.2	315	21 AAY68460	Sphingomonas sp. C
10	122.5	8.1	280	21 AAY68459	Sphingomonas sp. C
11	121	8.0	341	22 AAB96416	Putative P. abyssi

12	119.5	7.9	346	22 AAU36865	Staphylococcus aur
13	116.5	7.7	337	22 AAG92054	C glutamicum prote
14	116.5	7.7	337	22 AAB79386	Corynebacterium g1
15	116.5	7.7	341	22 AAU34111	Staphylococcus aur
16	112	7.4	229	19 AAW77759	Glucose-fructose o
17	112	7.4	332	20 AAY39310	SpnN protein invol
18	112	7.4	336	22 AAB70956	S. spinosa protein
19	112	7.4	344	22 AAU04826	Micromonospora eve
20	112	7.4	357	22 AAU34110	Staphylococcus aur
21	112	7.4	359	22 AAU36864	Staphylococcus aur
22	111.5	7.4	315	22 AAB96316	Putative P. abyssi
23	110.5	7.3	327	22 AAU03634	Group B Streptococ
24	105	7.0	329	22 AAE00480	Streptomyces galli
25	102.5	6.8	702	22 AAU49114	Propionibacterium
26	100	6.6	307	22 AAG98892	E. coli growth and
27	99.5	6.6	413	22 AAU56511	Propionibacterium
28	98.5	6.5	1316	22 AAG81126	Mycobacterium tube
29	98	6.5	1374	22 AAB69070	Human male enhance
30	97	6.4	359	22 AAG93130	C glutamicum prote
31	97	6.4	359	22 AAB79395	Corynebacterium g1
32	96	6.4	988	13 AAR24302	Transposase from g
33	95.5	6.3	344	22 AAU43141	Propionibacterium
34	95	6.3	219	19 AAW98401	H. pylori GPO 138
35	95	6.3	753	22 ABG20518	Novel human diagno
36	94.5	6.3	360	21 AAG23569	Arabidopsis thalia
37	94.5	6.3	363	21 AAG23568	Arabidopsis thalia
38	94.5	6.3	367	21 AAG23567	Arabidopsis thalia
39	94.5	6.3	463	21 AAG42560	Arabidopsis thalia
40	94.5	6.3	467	21 AAG42559	Arabidopsis thalia
41	94.5	6.3	506	21 AAG42558	Arabidopsis thalia
42	93.5	6.2	867	22 AAB96297	Putative P. abyssi
43	93	6.2	341	22 AAG89934	C glutamicum prote
44	93	6.2	341	22 AAB79394	Corynebacterium g1
45	93	6.2	417	22 AAB67972	Drosophila melanog

ALIGNMENTS

RESULT 1

AAG02024

ID AAG02024 standard; Protein: 60 AA.

AC AAG02024;

XX 06-OCT-2000 (first entry)

XX Human secreted protein, SEQ ID NO: 6105.

XX Human; 5' EST; expressed sequence tag; secreted protein; cDNA isolation;

XX gene therapy; chromosome mapping.

XX Homo sapiens.

XX EP1033401-A2.

XX 06-SEP-2000.

XX 21-FEB-2000; 2000EP-0200610.

XX 26-FEB-1999; 99US-0122487.

XX (GEST) GENSET.

XX Dumas Milne Edwards J, Duclert A, Giordano J;

XX WPI: 2000-500381/45.

XX N-PSDB: AAC02030.

XX New nucleic acid that is a 5' expressed sequence tag (5' EST) for
XX obtaining cDNAs and genomic DNAs that correspond to 5' ESTs and for
XX diagnostic, forensic, gene therapy and chromosome mapping procedures -

PS Claim 13; SEQ ID 6105; 71pp + CD-ROM; English.

XX The present sequence is a polypeptide encoded by one of a large number
CC of 5' ESTs derived from mRNAs encoding secreted proteins. The 5' ESTs
CC were prepared from total human RNAs or polyA+ RNAs derived from 30
CC different tissues. EST sequences usually correspond mainly to the 3'
CC untranslated region (UTR) of the mRNA because they are often obtained
CC from oligo-dT primed cDNA libraries. Such ESTs are not well suited for
CC isolating cDNA sequences derived from the 5' ends of mRNAs and even in
CC those cases where longer cDNA sequences have been obtained, the full 5'
CC UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5'
CC ends and can therefore be used to obtain full length cDNAs and genomic
CC DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and
CC chromosome mapping procedures. They are used to obtain upstream
CC regulatory sequences and to design expression and secretion vectors.

XX Sequence 60 AA;

Query Match 14.9%; Score 225; DB 21; Length 60;
Best Local Similarity 97.9%; Pred. No. 2.1e-14;
Matches 46; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 24 MRDLRNPSPSAFLNLGFGVSRRELSDGVDGQQISLEDAISSQVEV 70
DB 1 MRDLRNPSPSAFLNLGFGVSRRELSDGVDGQQISLEDAISSQVEV 47

RESULT 2

AAG02023
ID AAG02023 standard; Protein; 63 AA.

XX AAG02023;

XX AAG02023;

DT 06-OCT-2000 (first entry)

XX Human secreted protein, SEQ ID NO: 6104.

XX Human; 5' EST; expressed sequence tag; secreted protein; cDNA isolation;
KW gene therapy; chromosome mapping.

XX Homo sapiens.

XX EP1033401-A2.

XX 06-SEP-2000.

XX 21-FEB-2000; 2000EP-0200610.

XX 26-FEB-1999; 99US-0122487.

XX (GSEST) GENSET.

XX Dumas Milne Edwards J, Duclert A, Giordano J;

XX WPI; 2000-500381/45.

XX N-PSDB; AAC02029.

XX New nucleic acid that is a 5' expressed sequence tag (5' EST) for
PT obtaining cDNAs and genomic DNAs that correspond to 5' ESTs and for
PT diagnostic, forensic, gene therapy and chromosome mapping procedures -

PS Claim 13; SEQ ID 6104; 71pp + CD-ROM; English.

XX The present sequence is a polypeptide encoded by one of a large number
CC of 5' ESTs derived from mRNAs encoding secreted proteins. The 5' ESTs
CC were prepared from total human RNAs or polyA+ RNAs derived from 30
CC different tissues. EST sequences usually correspond mainly to the 3'
CC untranslated region (UTR) of the mRNA because they are often obtained
CC from oligo-dT primed cDNA libraries. Such ESTs are not well suited for
CC isolating cDNA sequences derived from the 5' ends of mRNAs and even in
CC those cases where longer cDNA sequences have been obtained, the full 5'
CC UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5'
CC ends and can therefore be used to obtain full length cDNAs and genomic

CC DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and
CC chromosome mapping procedures. They are used to obtain upstream
CC regulatory sequences and to design expression and secretion vectors.

XX Sequence 63 AA;

Query Match 12.1%; Score 182; DB 21; Length 63;
Best Local Similarity 92.3%; Pred. No. 3.3e-10;
Matches 36; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

QY 1 MNTPEPERKFGVVVGVGRAGSVRMRDLRNPSPSAFLNL 39
DB 1 MNAEPEPERKFGVVVGVGRAGSVRMRDLRNPSPSAFLNL 39

RESULT 3

ABG21584
ID ABG21584 standard; Protein; 434 AA.

XX ABG21584;

XX 18-FEB-2002 (first entry)

XX Novel human diagnostic protein #21575.

XX Human; chromosome mapping; gene mapping; gene therapy; forensic;
KW food supplement; medical imaging; diagnostic; genetic disorder.

XX Homo sapiens.

XX WO200175067-A2.

XX 11-OCT-2001.

XX 30-MAR-2001; 2001WO-US08631.

XX 31-MAR-2000; 2000US-0540217.

XX 23-AUG-2000; 2000US-0649167.

XX (HYSE-) HYSEQ INC.

XX Drmanac RT, Liu C, Tang YT;

XX WPI; 2001-639362/73.

XX N-PSDB; AAS85771.

XX New isolated polynucleotide and encoded polypeptides, useful in
PT diagnostics, forensics, gene mapping, identification of mutations
PT responsible for genetic disorders or other traits and to assess
PT biodiversity -

PS Claim 20; SEQ ID No 51943; 103pp; English.

XX The invention relates to isolated polynucleotide (I) and
CC polypeptide (II) sequences. (I) is useful as hybridisation probes,
CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome
CC and gene mapping, and in recombinant production of (II). The
CC polynucleotides are also used in diagnostics as expressed sequence tags
CC for identifying expressed genes. (I) is useful in gene therapy techniques
CC to restore normal activity of (II) or to treat disease states involving
CC (II). (II) is useful for generating antibodies against it, detecting or
CC quantitating a polypeptide in tissue, as molecular weight markers and as
CC a food supplement. (II) and its binding partners are useful in medical
CC imaging of sites expressing (II). (I) and (II) are useful for treating
CC disorders involving aberrant protein expression or biological activity.
CC The polypeptide and polynucleotide sequences have applications in
CC diagnostics, forensics, gene mapping, identification of mutations
CC responsible for genetic disorders or other traits to assess biodiversity
CC and to produce other types of data and products dependent on DNA and
CC amino acid sequences. ABG00010-ABG30377 represent novel human
CC diagnostic amino acid sequences of the invention.

CC Note: The sequence data for this patent did not appear in the printed
CC specification, but was obtained in electronic format directly from WIPO

CC quantitating a polypeptide in tissue, as molecular weight markers and as
CC a food supplement. (II) and its binding partners are useful in medical
CC imaging of sites expressing (II). (I) and (II) are useful for treating
CC disorders involving aberrant protein expression or biological activity.
CC The polypeptide and polynucleotide sequences have applications in
CC diagnostics, forensics, gene mapping, identification of mutations
CC responsible for genetic disorders or other traits to assess biodiversity
CC and to produce other types of data and products dependent on DNA and
CC amino acid sequences. ABG0010-ABG30377 represent novel human
CC diagnostic amino acid sequences of the invention.
CC Note: The sequence data for this patent did not appear in the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX SQ Sequence 389 AA;

Query Match 9.7%; Score 147; DB 22; Length 389;
Best Local Similarity 29.9%; Pred. No. 1e-05;
Matches 43; Conservative 28; Mismatches 53; Indels 20; Gaps 4;

QY 59 LEDALSSQVEVAYICSESSSHEDYIRQFLNAGKHVLVEVPMTSLAAQELWELAQKG 118

DB 222 LDEVLPDVKLVVCTHADSHFYAKRALPAGKNVLVERFTPTLQAQELFALAKSG 281

QY 119 KVLHEEHVELLMEEFAPLKKEVVGKDLLKGSLLFTAG-----PLEERFGFP---AFSG 169

DB 282 LTVTPYQNRFRDSCFLAKKAIESGKL--GEIVEVESHFDYRPAETKPLGPDGAFYG 339

QY 170 ISRL-----TWLVSLFGELS 184

DB 340 LGALFTNQGGFFKSLLSIFADSS 363

RESULT 6

ABB60024

ID ABB60024 standard; Protein; 335 AA.

XX AC ABB60024;

XX DT 26-MAR-2002 (first entry)

XX DE Drosophila melanogaster polypeptide SEQ ID NO 6864.

XX KW Drosophila; developmental biology; cell signalling; insecticide;
XX KW pharmaceutical.

XX OS Drosophila melanogaster.

XX PN WO200171042-A2.

XX PD 27-SEP-2001.

XX PF 23-MAR-2001; 2001WO-US09231.

XX PR 23-MAR-2000; 2000US-191637P.

XX PR 11-JUL-2000; 2000US-0614150.

XX PA (PEKE) PE CORP NY.

XX PI Venter JC, Adams M, Li PWD, Myers EW;

XX DR WPI; 2001-656860/75.

XX DR N-PSDB; ABL04127.

XX PT New isolated nucleic acid detection reagent for detecting 1000 or more
XX PT genes from Drosophila and for elucidating cell signalling and cell-cell
XX PT interactions

XX PS Disclosure; SEQ ID NO 6864; 21pp + Sequence Listing; English.

XX CC The invention relates to an isolated nucleic acid detection reagent
XX CC capable of detecting 1000 or more genes from Drosophila. The invention is
XX CC useful in developmental biology and in elucidating cell signalling and

CC cell-cell interactions in higher eukaryotes for the development of
CC insecticides, therapeutics and pharmaceutical drugs. The invention
CC discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA
CC sequences (ABL01840-ABL16175) and the encoded proteins
CC (ABB57737-ABB72072).

CC The sequence data for this patent did not form part of the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX SQ Sequence 335 AA;

Query Match 8.7%; Score 130.5; DB 22; Length 335;

Best Local Similarity 23.2%; Pred. No. 0.00033;

Matches 71; Conservative 43; Mismatches 96; Indels 96; Gaps 15;

QY 1 MNTPEPKFGVVVG-----VGRAGSVRMRLRNHPSSAFLNLIG-----FVSRREL- 48

DB 1 MQSOANLNWGIAGAGRITQDFVTALGTVE----KSRHVVAADVADGORAQQFAQRNOIP 56

QY 49 GSIDGVQOISLEDALSSQVEVAYICSESSSHEDYIRQFLNAGKHVLVEVPMTSLAAQ 108

DB 57 RHYDGFALALD-----REVEVVVGTLPNPFYAVVHMLARGKNVLCETPMCLSVQAK 111

QY 109 ELWELAQKGKVLHEEHVELLMEEF-----APLKKEVVGK-----D 144

DB 112 ELYTLAQKGKVLHEEHVELLMEEF-----APLKKEVVGK-----D 144

QY 145 LLKGSLLFTAG--PLEERFGFPAPFSGIS-----GVSPVKILPSTQNLNKRVDVDFMLDYGDDR 172

DB 172 SLOGSILMDIGIYALQGFQVF-----GVSPVKILPSTQNLNKRVDVDFMLDYGDDR 227

QY 173 LTWLVSLFGEL---SLVSATLEERKEDQYKMTVCLETKKS---PLSWIEKGGPLKRN 227

DB 228 LVALVTGLENLENDAVITGTGKELSNYW---CCTQISRSNAPPESW-----PLPRAK 278

QY 228 YLSFHF 233

DB 279 F-DFHY 283

RESULT 7

AAU49252

ID AAU49252 standard; Protein; 226 AA.

XX AC AAU49252;

XX DT 27-FEB-2002 (first entry)

XX DE Propionibacterium acnes immunogenic protein #10148.

XX KW SAPHO syndrome; synovitis; acne; pustulosis; hypertosis; osteomyelitis;
XX KW uveitis; endophthalmitis; bone; joint; central nervous system; ELISA;
XX KW inflammatory lesion; acne vulgaris; enzyme linked immunosorbent assay;
XX KW dermatological; osteopathic; neuroprotectant.

XX OS Propionibacterium acnes.

XX PN WO200181581-A2.

XX PD 01-NOV-2001.

XX PF 20-APR-2001; 2001WO-US12865.

XX PR 21-APR-2000; 2000US-199047P.

XX PR 02-JUN-2000; 2000US-208841P.

XX PR 07-JUL-2000; 2000US-216747P.

XX PA (CORI-) CORIXA CORP.

XX PI Skeiky YAW, Persing DH, Mitcham JI, Wang SS, Bhatia A;

XX PI L'maisonneuve J, Zhang Y, Jen S, Carter D;

XX DR WPI; 2001-616774/71.


```

PD 27-JAN-2000.
XX
XX 25-JUN-1999; 99WO-JP03410.
XX
XX 17-JUL-1998; 98JP-0203200.
XX
XX (MAZN ) COSMO RES INST.
XX (MAZN ) COSMO OIL CO LTD.
XX
XX Masai E, Fukuda M, Katayama Y, Nishikawa S, Hotta Y;
XX WPI; 2000-147784/13.
XX N-PSDB; AAZ88148, AAZ88151.
XX
XX New alpha-hydroxy-gamma-carboxymuconic acid eta-semialdehyde
XX PT dehydrogenase for industrial production of 2-pyrone-4,6-dicarboxylic
XX PT acid
XX
XX Claim 1; Page 26-27; 34pp; Japanese.
XX
XX The present sequence represents an alpha-hydroxy-gamma-carboxymuconic
XX acid-eta-semialdehyde dehydrogenase (CHMSD) originating in
XX CC Sphingomonas sp. CR-0310201. CHMSD can be used in the production of
XX CC 2-pyrone-4,6-dicarboxylic acid by culture of a transformant comprising
XX CC CHMSD in the presence of a suitable precursor such as
XX CC 3,4-dihydroxybenzoic acid (which is converted in situ into
XX CC alpha-hydroxy-gamma-carboxymuconic acid-eta-semialdehyde).
XX
XX Sequence 315 AA;
XX
Query Match 8.2%; Score 123.5; DB 21; Length 315;
Best Local Similarity 20.0%; Pred. No. 0.0014;
Matches 66; Conservative 53; Mismatches 136; Indels 75; Gaps 12;
QY 11 VVVVGVRAGSVRRDLRNPSPSAFLNLIGFVSRR-----ELGSDGVQVQ--ISLEDAL 63
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 3 IALAGAGAFGEKHLGLKIDG----VEIVSIISRKAEQAEEVAAYKAGKSGTDLSEAL 58
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
QY 64 SSQEVVAYTCSESSSHEDYIRQFLNAGKHLVVEYPTLSLAAQELWELAEQKGVLHE 123
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 59 ARDDVDVAILCTPTQMAEQAIACMNAKGVQVEIPLADSWADAEAVYKKSQETGLVCMV 118
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
QY 124 EHVELLMEEFAFLKKEVVGKDL 169
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 119 GHTRRFNPSHQYIHNKIV-----AGELAIQMDVQTYFFRRKNNNAKGEPRSW 166
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
QY 170 ISRLTW-----LVSLEF-----ELSLYSATLEERKEDQYKMTVCLE 206
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 167 TDHLWHHAHTVDLFAFYQAGKIVQANAVOGPIHPLEGIAMDMSIQLKSETGAICTLSLS 226
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
QY 207 TEKKSPLS---WTEKGPGKLRNRYLSFHFSGSLE--NVPNVGVNKN--IFLKDQNI 259
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 227 FNNDPGLGTFRYICDNGTWIARYDDL----VTGKEEPDVSKVDVSMNGIELQDREFIA 282
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
QY 260 QKLGQFSEKELAAEKRIHLGLAEIEQ 289
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 283 AIREGREPNSSVA---RVLDCYRVIGELE 308
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
RESULT 10
AAV68459
ID AAV68459 standard; Protein; 280 AA.
XX
XX AAV68459;
XX
XX 20-APR-2000 (first entry)
XX
XX Sphingomonas sp. CR-0310201 CHMSD SEQ ID NO:1.
XX
XX Alpha-hydroxy-gamma-carboxymuconic acid-eta-semialdehyde dehydrogenase;
XX 2-pyrone-4,6-dicarboxylic acid; 3,4-dihydroxybenzoic acid.
XX
XX Sphingomonas sp.

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XX
XX PN WO200004134-A1.
XX
XX PD 27-JAN-2000.
XX
XX PF 25-JUN-1999; 99WO-JP03410.
XX
XX PR 17-JUL-1998; 98JP-0203200.
XX
XX (MAZN ) COSMO RES INST.
XX (MAZN ) COSMO OIL CO LTD.
XX
XX Masai E, Fukuda M, Katayama Y, Nishikawa S, Hotta Y;
XX WPI; 2000-147784/13.
XX N-PSDB; AAZ88147.
XX
XX New alpha-hydroxy-gamma-carboxymuconic acid eta-semialdehyde
XX PT dehydrogenase for industrial production of 2-pyrone-4,6-dicarboxylic
XX PT acid
XX
XX Claim 1; Page 23-25; 34pp; Japanese.
XX
XX The present sequence represents an alpha-hydroxy-gamma-carboxymuconic
XX acid-eta-semialdehyde dehydrogenase (CHMSD) originating in
XX CC Sphingomonas sp. CR-0310201. CHMSD can be used in the production of
XX CC 2-pyrone-4,6-dicarboxylic acid by culture of a transformant comprising
XX CC CHMSD in the presence of a suitable precursor such as
XX CC 3,4-dihydroxybenzoic acid (which is converted in situ into
XX CC alpha-hydroxy-gamma-carboxymuconic acid-eta-semialdehyde).
XX
XX Sequence 280 AA;
XX
Query Match 8.1%; Score 122.5; DB 21; Length 280;
Best Local Similarity 22.5%; Pred. No. 0.0015;
Matches 32; Conservative 33; Mismatches 66; Indels 11; Gaps 3;
QY 11 VVVVGVRAGSVRRDLRNPSPSAFLNLIGFVSRR-----ELGSDGVQVQ--ISLEDAL 63
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 3 IALAGAGAFGEKHLGLKIDG----VEIVSIISRKAEQAEEVAAYKAGKSGTDLSEAL 58
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
QY 64 SSQEVVAYTCSESSSHEDYIRQFLNAGKHLVVEYPTLSLAAQELWELAEQKGVLHE 123
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 59 ARDDVDVAILCTPTQMAEQAIACMNAKGVQVEIPLADSWADAEAVYKKSQETGLVCMV 118
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
QY 124 EHVELLMEEFAFLKKEVVGKDL 145
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 119 GHTRRFNPSHQYIHNKIVAGEL 140
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
RESULT 11
AAB96416
ID AAB96416 standard; Protein; 341 AA.
XX
XX AAB96416;
XX
XX 29-OCT-2001 (first entry)
XX
XX Putative P. abyssi dehydrogenase #9.
XX
XX Hyperthermophilic archaeon; hyperthermophilic protein.
XX
XX Pyrococcus abyssi.
XX
XX FR2792651-A1.
XX
XX 27-OCT-2000.
XX
XX 21-APR-1999; 99FR-0005034.
XX
XX 21-APR-1999; 99FR-0005034.
XX
XX (CNRS ) CNRS CENT NAT RECH SCI.

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:08 ; Search time 1.2717 Seconds
(without alignments)
952.238 Million cell updates/sec

Title: US-09-606-129a-18

Perfect score: 41

Sequence: 1 KKRIMHC 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

SPTREMBL19:**
1: sp_archaea:**
2: sp_bacteria:**
3: sp_fungi:**
4: sp_human:**
5: sp_invertebrate:**
6: sp_mammal:**
7: sp_mhc:**
8: sp_organelle:**
9: sp_phase:**
10: sp_plant:**
11: sp_rodent:**
12: sp_virus:**
13: sp_vertebrate:**
14: sp_unclassified:**
15: sp_rvirus:**
16: sp_bacteriap:**
17: sp_archaeap:**

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	41	100.0	599	10 Q9FHV3	Q9fHV3 arabidopsis
2	41	100.0	633	10 Q49511	Q49511 arabidopsis
3	38	92.7	295	11 Q9CY64	Q9cy64 mus musculus
4	38	92.7	296	4 Q9BRW8	Q9brw8 homo sapien
5	38	92.7	296	4 Q96QL4	Q96ql4 homo sapien
6	38	92.7	303	11 Q9DD21	Q9dd21 mus musculus
7	37	90.2	106	5 Q9XZM5	Q9xzm5 leishmania
8	36	87.8	512	10 Q9LML0	Q9lml0 arabidopsis
9	35	85.4	508	11 Q9D6S2	Q9d6s2 mus musculus
10	34	82.9	279	11 Q9QXV3	Q9qxv3 mus musculus
11	34	82.9	401	10 Q9M149	Q9m149 arabidopsis
12	34	82.9	431	10 Q04613	Q04613 arabidopsis
13	33	80.5	189	2 Q03949	Q03949 anabaena sp
14	33	80.5	267	2 Q9AKS0	Q9aks0 pseudomonas
15	33	80.5	495	10 Q9ST63	Q9st63 solanum tub
16	33	80.5	499	10 Q941V1	Q941v1 oryza sativ

17	33	80.5	508	10 Q80874	Q80874 arabidopsis
18	32	78.0	102	10 Q9S738	Q9s738 lycopersico
19	32	78.0	104	15 Q9Q553	Q9q553 human immun
20	32	78.0	108	16 P75909	P75909 escherichia
21	32	78.0	111	4 Q9H007	Q9h007 homo sapien
22	32	78.0	142	4 Q9BTS7	Q9bts7 homo sapien
23	32	78.0	233	4 Q9UIJ2	Q9uij2 homo sapien
24	32	78.0	235	4 Q9P0U6	Q9p0u6 homo sapien
25	32	78.0	279	4 Q43658	Q43658 homo sapien
26	32	78.0	279	4 Q9HD98	Q9hd98 homo sapien
27	32	78.0	279	4 Q9UK52	Q9uk52 homo sapien
28	32	78.0	283	4 Q9HD99	Q9hd99 homo sapien
29	32	78.0	294	4 Q00532	Q00532 homo sapien
30	32	78.0	338	3 Q9CIL3	Q9cil3 neurospora
31	32	78.0	377	16 Q9KSC1	Q9kscl vibrio chol
32	32	78.0	422	4 Q9UK53	Q9uk53 homo sapien
33	32	78.0	422	4 Q9UIJ4	Q9uij4 homo sapien
34	32	78.0	455	5 Q9VJ28	Q9vj28 drosophila
35	32	78.0	497	10 Q9C8V1	Q9c8v1 arabidopsis
36	32	78.0	516	5 Q21592	Q21592 caenorhabdi
37	32	78.0	571	10 Q24022	Q24022 lycopersico
38	32	78.0	590	10 Q98S67	Q98s67 gullardia
39	32	78.0	601	4 Q9BRB5	Q9brb5 homo sapien
40	32	78.0	978	5 Q9U6W5	Q9u6w5 caenorhabdi
41	31	75.6	109	5 Q9VZM4	Q9vzm4 drosophila
42	31	75.6	137	4 Q9NSR1	Q9nsr1 homo sapien
43	31	75.6	152	5 Q44797	Q44797 caenorhabdi
44	31	75.6	153	14 Q91UN1	Q91un1 plasmid psb
45	31	75.6	234	12 Q91GH4	Q91gh4 epiphyas po

ALIGNMENTS

RESULT 1

Q9FHV3 ID Q9FHV3 PRELIMINARY; PRT; 599 AA.
AC Q9FHV3;
DT 01-MAR-2001 (TRENBLrel. 16, Created)
DT 01-MAR-2001 (TRENBLrel. 16, Last sequence update)
DT 01-MAR-2001 (TRENBLrel. 16, Last annotation update)
DE MUTATOR-LIKE TRANSPOSASE-LIKE PROTEIN.
OS Arabidopsis thaliana (Mouse-ear cross).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
OC eurosids II; Brassicales; Brassicaceae; Arabidopsiis.
OX NCBI_TaxID=3702;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=COLUMBIA;
RX MEDLINE=93937451; PubMed=10470850;
RA Kaneko T., Katoh T., Sato S., Nakamura Y., Asamizu E., Kotani H.,
RA Miyajima N., Tabata S.;
RT "Structural analysis of Arabidopsis thaliana chromosome 5. IX.
RT Sequence features of the regions of 1,011,550 bp covered by seventeen
RT pl and TAC clones."
RL DNA Res. 6:183-195(1999).
DR EMBL; AB017068; BAB1366.1; .
SQ SEQUENCE 599 AA; 69407 MW; 36BAEE2F2A82D717 CRC64;

Query Match 100.0%; Score 41; DB 10; Length 599;
Best Local Similarity 100.0%; Pred. No. 0.95;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|||||||
Db 563 KKRIMHC 569

RESULT 2

Q49511 ID Q49511 PRELIMINARY; PRT; 633 AA.
AC Q49511;

DT 01-JUN-1998 (TReMBLrel. 06, Created)
 DT 01-JUN-1998 (TReMBLrel. 06, Last sequence update)
 DT 01-DEC-2001 (TReMBLrel. 19, Last annotation update)
 DE MUDR TRANSPOSABLE ELEMENT - LIKE PROTEIN (MUDR TRANSPOSABLE ELEMENT-LIKE PROTEIN).
 DE LIKE PROTEIN).
 GN F28J12.70 OR AT4G18410.
 OS Arabidopsis thaliana (Mouse-ear cress).
 OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
 OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
 OC eucosids II; Brassicales; Brassicaceae; Arabidopsis.
 OX NCBI_TaxID=3702;
 [1]
 RP SEQUENCE FROM N.A.
 RA Bevan M., Hilbert H., Braun M., Holzer E., Brandt A., Duesterhoeft A.,
 RA Bancroft I., Mewes H.W., Mayer K., Schueller C.;
 RL Submitted (FEB-1998) to the EMBL/GenBank/DBJ databases.
 RN [2]
 RP SEQUENCE FROM N.A.
 RA Hilbert H., Braun M., Holzer E., Brandt A., Duesterhoeft A.,
 RA Mewes H.W., Lemcke K., Mayer K.F.X.;
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 RN [3]
 RP SEQUENCE FROM N.A.
 RA EU Arabidopsis sequencing project;
 RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AL021710; CAAL16721.1; -;
 DR EMBL; AL161548; CAB78843.1; -;
 DR InterPro: IPR004332; MUDR.
 DR Pfam: PF03108; MUDR; 1.
 SQ SEQUENCE 633 AA; 72930 MW; 3FC298BF2218C623 CRC64;

 Query Match 100.0%; Score 41; DB 10; Length 633;
 Best Local Similarity 100.0%; Pred. No. 0.99;
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

 Qy 1 KKRIMHC 7
 Db 591 KKRIMHC 597

 RESULT 3
 Q9CY64 PRELIMINARY; PRT; 295 AA.
 ID Q9CY64
 AC Q9CY64;
 DT 01-JUN-2001 (TReMBLrel. 17, Created)
 DT 01-JUN-2001 (TReMBLrel. 17, Last sequence update)
 DT 01-JUN-2001 (TReMBLrel. 17, Last annotation update)
 DE 2500001N03RIK PROTEIN.
 DE 2500001N03RIK.
 GN Mus musculus (Mouse).
 OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=C57BL/6J; TISSUE=EMBRYONIC LIVER;
 RX MEDLINE=21085660; PubMed=11217851;
 RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
 RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
 RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
 RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
 RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
 RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
 RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
 RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
 RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
 RA Blake J., Bojunga N., Carninci P., de Bonaldo M.F.,
 RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
 RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
 RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
 RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
 RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
 RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
 RA Hayashizaki Y.;
 RT "Functional annotation of a full-length mouse cDNA collection.";
 RL Nature 409:685-690(2001).
 DR EMBL; AK010847; BAB27219.1; -;
 DR MBL; MGI:1917355; 2500001N03RIK.
 DR InterPro: IPR000683; GFO_IDH_MoCA.
 DR Pfam: PF01408; GFO_IDH_MoCA; 1.
 SQ SEQUENCE 295 AA; 33524 MW; F2E1682BD77032A4 CRC64;

 Query Match 92.7%; Score 38; DB 11; Length 295;
 Best Local Similarity 85.7%; Pred. No. 2.2;
 Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

 Qy 1 KKRIMHC 7
 Db 274 KKRILHC 280

 RESULT 4
 Q9BRW8 PRELIMINARY; PRT; 296 AA.
 ID Q9BRW8
 AC Q9BRW8;
 DT 01-JUN-2001 (TReMBLrel. 17, Created)
 DT 01-JUN-2001 (TReMBLrel. 17, Last sequence update)
 DT 01-DEC-2001 (TReMBLrel. 19, Last annotation update)
 DE SIMILAR TO BILIVERDIN REDUCTASE A.
 DE Homo sapiens (Human).
 OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=BRAIN, PRIMITIVE NEUROECTODERMAL;
 RA Strausberg R.;
 RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.
 DR EMBL; BC005902; AAH05902.1; -;
 DR InterPro: IPR000683; GFO_IDH_MoCA.
 DR Pfam: PF01408; GFO_IDH_MoCA; 1.
 SQ SEQUENCE 296 AA; 33432 MW; A389AFDDB6ADB6BF CRC64;

 Query Match 92.7%; Score 38; DB 4; Length 296;
 Best Local Similarity 85.7%; Pred. No. 2.2;
 Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

 Qy 1 KKRIMHC 7
 Db 275 KKRILHC 281

 RESULT 5
 Q96QL4 PRELIMINARY; PRT; 296 AA.
 ID Q96QL4
 AC Q96QL4;
 DT 01-DEC-2001 (TReMBLrel. 19, Created)
 DT 01-DEC-2001 (TReMBLrel. 19, Last sequence update)
 DT 01-DEC-2001 (TReMBLrel. 19, Last annotation update)
 DE UNKNOWN (PROTEIN FOR MGC:14706).
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=PROSTATE;
 RA Strausberg R.;
 RL Submitted (MAY-2001) to the EMBL/GenBank/DBJ databases.
 DR EMBL; BC008456; AAH08456.1; -;
 SQ SEQUENCE 296 AA; 33428 MW; 2CF2AA7FICDDB707 CRC64;

 Query Match 92.7%; Score 38; DB 4; Length 296;
 Best Local Similarity 85.7%; Pred. No. 2.2;
 Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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Oy 1 KKRIMHC 7
    |||:|
Db 275 KKRILHC 281

RESULT 6
Q9DD21 PRELIMINARY; PRT; 303 AA.
ID Q9DD21
AC Q9DD21
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE 0610006A1LRK PROTEIN.
GN 0610006A1LRK
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RC SEQUENCE FROM N.A.
RX STRAIN=C57BL/6J; TISSUE=KIDNEY;
RX MEDLINE=21085660; PubMed=11217851;
RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavani T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Stauber F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seyta T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wyshaw-Borls A., Yoshida K., Hasegawa Y., Kawaji H., Kohsaki S.,
RA Wyshaw-Borls A., Yoshida K., Hasegawa Y., Kawaji H., Kohsaki S.,
RA "Functional annotation of a full-length mouse cDNA collection."
RT Nature 409:685-690(2001).
RL EMBL; AK002231; BAB21950.1;
DR MGD; MGI:1915580; 0610006A1LRK.
DR InterPro; IPR000683; GFO_IDH_MOCA.
DR Pfam; PF01408; GFO_IDH_MOCA; 1.
SQ SEQUENCE 303 AA; 34491 MW; 52D8A3B02EE956EB CRC64;

Query Match 92.7%; Score 38; DB 11; Length 303;
Best Local Similarity 85.7%; Pred. No. 2.3;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
    |||:|
Db 274 KKRILHC 280

RESULT 7
Q9XZM5 PRELIMINARY; PRT; 106 AA.
ID Q9XZM5
AC Q9XZM5;
DT 01-NOV-1999 (TrEMBLrel. 12, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE RIBOSOMAL PROTEIN L44.
GN RPL44.
OS Leishmania amazonensis.
OC Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Leishmania.
OX NCBI_TaxID=5659;
RN [1]
RC SEQUENCE FROM N.A.
RX STRAIN=LV78;

Porter-Kelley J., Chaudhuri G.;
RT "Cloning and characterization of Leishmania ribosomal protein L44.";
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: BELONGS TO THE L44E FAMILY OF RIBOSOMAL PROTEINS.
DR EMBL; AF148853; AAD31928.2; -.
DR InterPro; IPR000552; Ribosomal_L44E.
DR Pfam; PF00935; Ribosomal_L44; 1.
DR ProDom; PD002841; Ribosomal_L44E; 1.
DR PROSITE; PS01172; RIBOSOMAL_L44E; 1.
KW Ribosomal protein.
SQ SEQUENCE 106 AA; 12283 MW; F30A3AB2047B0334 CRC64;

Query Match 90.2%; Score 37; DB 5; Length 106;
Best Local Similarity 71.4%; Pred. No. 1.5;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
    |||:|
Db 6 KKRVMHC 12

RESULT 8
Q9LML0 PRELIMINARY; PRT; 512 AA.
ID Q9LML0
AC Q9LML0;
DT 01-OCT-2000 (TrEMBLrel. 15, Created)
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE F10K1.11 PROTEIN.
GN F10K1.11.
OS Arabidopsis thaliana (Mouse-ear cress).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
OC eurosids II; Brassicales; Brassicaceae; Arabidopsids.
OX NCBI_TaxID=3702;
RN [1]
RC SEQUENCE FROM N.A.
RA Liu S.X., Chan A., Yu G., Etgu P., Lee J.M., Lenz C., Pham P.,
RA Sakano H., Toriumi M., Chung M., Goldsmith A., Liu A., Liu A.,
RA Vaysberg M., Alcafi H., Brooks S., Suehler E., Chao Q., Conn L.,
RA Conway A., Hansen N., Johnson-Hopson C., Khan S., Kim C., Lam B.,
RA Miranda M., Nguyen M., Palm C.J., Shinn P., Southwick A., Davis R.W.,
RA Ecker J.R., Federspiel N.A., Theologis A.;
RT "The sequence of BAC F10K1 from Arabidopsis thaliana chromosome 1.";
RL Submitted (JAN-2001) to the EMBL/GenBank/DBJ databases.
CC -1- COFACTOR: FAD (BY SIMILARITY).
DR EMBL; AC067971; AAF82202.1; -.
DR InterPro; IPR001327; FAD_pyr_redox.
DR Pfam; PF00070; pyr_redox; 1.
KW FAD; Flavoptrotein; Oxidoreductase.
SQ SEQUENCE 512 AA; 56857 MW; 1F63AFA9A1A2C13B CRC64;

Query Match 87.8%; Score 36; DB 10; Length 512;
Best Local Similarity 71.4%; Pred. No. 9.5;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
    |||:|
Db 236 KKRLLHC 242

RESULT 9
Q9DS2 PRELIMINARY; PRT; 508 AA.
ID Q9DS2
AC Q9DS2;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE 2'-5' OLIGOADENYLATE SYNTHETASE-LIKE.
GN OASL.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RC SEQUENCE FROM N.A.
RX STRAIN=LV78;
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OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=TONGUE;
RX MEDLINE=21085660; PubMed=11217851;
RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukuishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaoka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaudo I., Pesole G., Quackenbush J.,
RA Schriml L.M., Stauber F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Nordone P., King B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Suzuki H., Toyooka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashizaki Y.;
RA "Functional annotation of a full-length mouse cDNA collection.";
RT Nature 409:685-690(2001).
RL EMBL; AK010034; BAB26655.1; -.
DR MGD; MGI:1344390; Oasi.
DR InterPro: IPR001797; 25A.synth.
DR InterPro: IPR001201; PAP_25A.core.
DR InterPro: IPR000626; Ubiquitin.
DR Pfam; PF00240; ubiquitin; 1.
DR SMART; SM00213; UBQ; 1.
DR PROSITE; PS00833; 25A_SYNTH_2; UNKNOWN_1.
DR PROSITE; PS0153; 25A_SYNTH_3; 1.
DR PROSITE; PS00053; UBIQUITIN_2; 1.
SQ SEQUENCE 508 AA; 58767 MW; 9552B4540CC801A0 CRC64;

Query Match 85.4%; Score 35; DB 11; Length 508;
Best Local Similarity 71.4%; Pred. No. 15;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
Db 109 KKRILHC 115
|||||
|:|::||

RESULT 10
Q9QXV3 PRELIMINARY; PRT; 279 AA.
AC Q9QXV3; Q9QXV4; Q9QUP8; Q9QZX3;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE INCI PROTEIN.
GN INCI.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A., AND CHARACTERIZATION.
RC STRAIN=129/SVJ; TISSUE=BRAIN, EMBRYONIC FIBROBLAST, AND SPLEEN;
RX MEDLINE=20011419; PubMed=10542254;
RA Zermanski M., Hill J.E., Kwek S.S., Grigorian I.A., Gurova K.V.,
RA Garkavtsev I.V., Diatchenko L., Koonin E.V., Gudkov A.V.;
RT "Structure and regulation of the mouse ingi gene. Three alternative
RT transcripts encode two PHD finger proteins that have opposite effects
RT on p53 function.";
RL J. Biol. Chem. 274:32172-32181(1999).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RA Rancourt D., Garkavtsev I.;
RT "Structural organization and expression pattern of the murine INGI

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RT gene.";
RL Submitted (MAY-1999) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RC TISSUE-BREAST TUMOR;
RA Strausberg R.;
CC Submitted (OCT-2001) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: ISOFORM 1 INHIBITS P53-DEPENDENT TRANSCRIPTIONAL
CC ACTIVATION AND MAY FUNCTION AS AN ONCOPROTEIN. ISOFORM 2 ACTS AS A
CC NEGATIVE GROWTH REGULATOR BY COOPERATING WITH P53 IN
CC TRANSCRIPTIONAL ACTIVATION OF P53-RESPONSIVE GENES AND MAY ACT AS
CC A TUMOR SUPPRESSOR.
CC -1- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
CC -1- ALTERNATIVE PRODUCTS: 2 ISOFORMS; 1 (SHOWN HERE) AND 2; ARE
CC PRODUCED BY ALTERNATIVE SPLICING.
CC -1- TISSUE SPECIFICITY: IN THE ADULT, WIDELY EXPRESSED WITH HIGHEST
CC LEVELS IN THYMUS AND TESTIS. EXPRESSED THROUGHOUT THE WHOLE EMBRYO
CC AT ALL STAGES OF DEVELOPMENT EXAMINED. AT DAY 10, HIGHEST
CC EXPRESSION IS FOUND IN THE YOLK SAC WHILE AT DAY 16 AND 18, HIGHER
CC LEVELS ARE FOUND IN INNER COMPARTMENTS OF BONE.
CC -1- DEVELOPMENTAL STAGE: IN THE EMBRYO, HIGHEST EXPRESSION OF ISOFORM
CC 1 IS FOUND AT DAY 11 WHILE HIGHEST EXPRESSION OF ISOFORM 2 IS
CC FOUND AT DAY 7.
CC -1- SIMILARITY: CONTAINS 1 PHD-FINGER DOMAIN.
DR EMBL; AF177753; AAF16911.1; -.
DR EMBL; AF177755; AAF16908.1; -.
DR EMBL; AF177756; AAF16909.1; -.
DR EMBL; AF177757; AAF16910.1; -.
DR EMBL; AF149820; AAF09183.1; -.
DR EMBL; BC016573; AAH16573.1; -.
DR MGD; MGI:1349481; Ingi.
DR InterPro; IPR001965; PHD.
DR Pfam; PF00628; PHD; 1.
DR SMART; SM00249; PHD; 1.
KW Oncogene; Anti-oncogene; Alternative splicing.
FT VARSPPLIC 210 259 PHD-FINGER.
FT CONFLICT 203 203 MISSING (IN ISOFORM 2).
FT CONFLICT 203 203 L -> F (IN REF. 2).
SQ SEQUENCE 279 AA; 32109 MW; 6765C984EEF179F4 CRC64;

Query Match 82.9%; Score 34; DB 11; Length 279;
Best Local Similarity 57.1%; Pred. No. 15;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
Db 67 KRRVLHC 73
|||||
|:|::||

RESULT 11
Q9M149 PRELIMINARY; PRT; 401 AA.
AC Q9M149;
DT 01-OCT-2000 (TrEMBLrel. 15, Created)
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE PUTATIVE PHOSPHATIDYLINOSITOL KINASE.
GN AT4G01190.
OS Arabidopsis thaliana (Mouse-ear cress).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
OC eurosids II; Brassicales; Brassicaceae; Arabidopsiis.
OX NCBI_TaxID=3702;
RN [1]
RP SEQUENCE FROM N.A.
RA Lamar B., Stoneking T., Stumpf J., Mewes H.W., Lemcke K.,
RA Mayer K.F.X.;
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RA EU Arabidopsis sequencing project;
RL Submitted (MAR-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AL161491; CAB80928.1; -.

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DR InterPro: IPR002498; PIP5K.
DR Pfam: PF01504; PIP5K; 1.
DR SMART: SM00330; PIP5K; 1.
KW Kinase.

SQ SEQUENCE 401 AA; 45659 MW; 8A12D10DA2DEDACA CRC64;

Query Match 82.9%; Score 34; DB 10; Length 401;
Best Local Similarity 85.7%; Pred. No. 21;
Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7

Db 353 KKRIMHC 359

RESULT 12

ID 004613 PRELIMINARY; PRT; 431 AA.

AC 004613;

DT 01-JUL-1997 (TREMBlrel. 04, Created)

DT 01-JUL-1997 (TREMBlrel. 04, Last sequence update)

DT 01-DEC-2001 (TREMBlrel. 19, Last annotation update)

DE A_IG002N01.9 PROTEIN.

GN A_IG002N01.9.

OS Arabidopsis thaliana (Mouse-ear cress).

OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;

OC eucotyledons II; Brassicales; Brassicaceae; Arabidopsis.

OX NCBI_TaxID=3702;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=CV. COLUMBIA;

RA Scheet P., Maggi L.;

RT "The sequence of A. thaliana IG002N01.";

RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.

RN [2]

RP SEQUENCE FROM N.A.

RC STRAIN=CV. COLUMBIA;

RA Wash-U;

RT "The A. thaliana Genome Sequencing Project.";

RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.

RN [3]

RP SEQUENCE FROM N.A.

RC STRAIN=CV. COLUMBIA;

RA Waterston R.;

RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.

DR EMBL: AF007269; AAB61030.1; -

DR InterPro: IPR002498; PIP5K.

DR Pfam: PF01504; PIP5K; 1.

DR SMART: SM00330; PIP5K; 1.

SQ SEQUENCE 431 AA; 49356 MW; 07A53F23BDDDD942B CRC64;

Query Match 82.9%; Score 34; DB 10; Length 431;
Best Local Similarity 85.7%; Pred. No. 22;
Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7

Db 383 KKRIMHC 389

RESULT 13

Q03949

ID Q03949 PRELIMINARY; PRT; 189 AA.

AC Q03949;

DT 01-NOV-1996 (TREMBlrel. 01, Created)

DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)

DT 01-NOV-1998 (TREMBlrel. 08, Last annotation update)

DE INSERTION ELEMENT IS895 HYPOTHETICAL 21.9 KDA PROTEIN (ORF1).

OS Anabaena sp. (strain PCC 7120).

OC Bacteria; Cyanobacteria; Nostocales; Nostoc.

OX NCBI_TaxID=103690;

RN [1]

RP SEQUENCE FROM N.A.

RX MEDLINE=91358370; PubMed=1653219;

RA Alam J., Vrba J.M., Cai Y., Martin J.A., Weislo L.J., Curtis S.E.;

RT "Characterization of the IS895 family of insertion sequences from the

RL cyanobacterium Anabaena sp. strain PCC 7120.";

RL J. Bacteriol. 173:5778-5783(1991).

DR EMBL: M67475; AAA98138.1; -

DR PIR: A38117; A38117.

KW Hypothetical protein; Transposable element.

SQ SEQUENCE 189 AA; 21937 MW; B873A342856C2103 CRC64;

Query Match 80.5%; Score 33; DB 2; Length 189;

Best Local Similarity 71.4%; Pred. No. 17;

Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7

Db 171 KKRIMHC 177

RESULT 14

Q9AKS0

ID Q9AKS0 PRELIMINARY; PRT; 267 AA.

AC Q9AKS0;

DT 01-JUN-2001 (TREMBlrel. 17, Created)

DT 01-JUN-2001 (TREMBlrel. 17, Last sequence update)

DT 01-OCT-2001 (TREMBlrel. 18, Last annotation update)

DE TATC PROTEIN.

GN TATC.

OS Pseudomonas stutzeri (Pseudomonas perfectomarina).

OC Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;

OC Pseudomonas

OX NCBI_TaxID=316;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=ZOBELL ATCC14405;

RX MEDLINE=21101859; PubMed=11160097;

RA Heikkilae M.P., Honisch U., Wunsch P., Zumft W.G.;

RT "Role of the Tat transport system in nitrous oxide reductase

RT translocation and cytochrome cdi biosynthesis in Pseudomonas

RT stutzeri.";

RL J. Bacteriol. 183:1663-1671(2001).

DR EMBL: AJ299712; CAC29149.1; -

DR InterPro: IPR002033; UPF0032.

DR Pfam: PF00902; UPF0032; 1.

DR PROSITE: PS01218; UPF0032; 1.

SQ SEQUENCE 267 AA; 29439 MW; 4369EB5E38BCD736 CRC64;

Query Match 80.5%; Score 33; DB 2; Length 267;

Best Local Similarity 57.1%; Pred. No. 23;

Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7

Db 21 KKRIMHC 27

RESULT 15

Q9ST63

ID Q9ST63 PRELIMINARY; PRT; 495 AA.

AC Q9ST63;

DT 01-MAY-2000 (TREMBlrel. 13, Created)

DT 01-MAY-2000 (TREMBlrel. 13, Last sequence update)

DT 01-DEC-2001 (TREMBlrel. 19, Last annotation update)

DE PUTATIVE INTERNAL ROTENONE-INSENSITIVE NADH DEHYDROGENASE.

GN NDA1.

OS Solanum tuberosum (Potato).

OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;

OC Asteridae; euasterids I; Solanales; Solanaceae; Solanum.

OX NCBI_TaxID=4113;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=CV. DESIREE; TISSUE=LEAF;
RX MEDLINE=20040052; PubMed=10571867;
RA Rasmussen A.G., Svensson A., Knoop V., Grohmann L., Brennicke A.;
RT "Homologues of yeast and bacterial rotenone-insensitive NADH
dehydrogenases in higher eukaryotes: two enzymes are present in potato
mitochondria.";
RL Plant J. 20:79-87(1999).
CC -I- COFACTOR: FAD (BY SIMILARITY).
DR EMBL: AJ245861; CAB52796.1; -.
DR InterPro: IPR001327; FAD_pyr_redox.
DR Pfam: PF00070; pyr_redox; 1.
KW FAD; Flavoprotein; NAD; Oxidoreductase.
SQ SEQUENCE 495 AA; 54902 MW; 6AFFC807BEB01340 CRC64;

Query Match 80.5%; Score 33; DB 10; Length 495;
Best Local Similarity 57.1%; Pred. No. 40;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|:|:|
Db 224 KRLLHC 230

Search completed: November 1, 2002, 14:49:46
Job time : 3.2717 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:41:32 : Search time 0.360129 seconds
(without alignments)
752.611 Million cell updates/sec

Title: US-09-606-129A-18
Perfect score: 41
Sequence: 1 KKRIMHC 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_40.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	41	100.0	295	1 BIEA_RAT	P46844 rattus norv
2	38	92.7	296	1 BIEA_HUMAN	P53004 homo sapien
3	35	85.4	473	1 OASL_MOUSE	Q922f2 mus musculu
4	33	80.5	925	1 PIP1_YEAST	P40020 saccharomyc
5	32	78.0	140	1 FKB2_MOUSE	P45878 mus musculu
6	32	78.0	141	1 FKB2_HUMAN	P26885 homo sapien
7	32	78.0	328	1 HYBA_ECOLI	P37179 escherichia
8	32	78.0	528	1 DYR2_HUMAN	Q92630 homo sapien
9	32	78.0	571	1 AMPL_LYCES	Q10712 lycopersico
10	32	78.0	573	1 AMPL_SOLTU	P31427 solanum tub
11	31	75.6	105	1 RL44_TRYBB	P17843 trypanosoma
12	31	75.6	279	1 Y091_NPVOP	O10341 oryza pseu
13	31	75.6	323	1 CYCH_XENLA	P51947 xenopus lae
14	31	75.6	451	1 SUN_HAEIN	P44788 haemophilus
15	31	75.6	768	1 CUL3_HUMAN	Q13618 homo sapien
16	31	75.6	768	1 CUL3_MOUSE	Q9jlv5 mus musculu
17	31	75.6	861	1 UL52_HSVJ7	P52468 human herpe
18	30	73.2	108	1 YZ09_MERJA	O60271 methanococc
19	30	73.2	4128	1 PRKD_MOUSE	P97313 mus musculu
20	29	70.7	38	1 RL36_THEMA	Q9x116 thermotoga
21	29	70.7	142	1 SECB_BUCAI	P57161 buchnera ap
22	29	70.7	144	1 YHP5_YEAST	P38808 saccharomyc
23	29	70.7	257	1 ZG1L_CAEEL	P55326 caenorhabdi
24	29	70.7	300	1 RANT_BPF22	P03037 bacterioph
25	29	70.7	359	1 ODPB_RAT	P49432 rattus norv
26	29	70.7	423	1 SHP1_YEAST	P34223 saccharomyc
27	29	70.7	560	1 DY2H_SCHPO	Q10264 schizosacch
28	29	70.7	588	1 DYR3_HUMAN	Q43781 homo sapien
29	29	70.7	632	1 AFUB_HAEIN	O57341 haemophilus
30	29	70.7	670	1 REP_HAEIN	P44804 haemophilus
31	29	70.7	918	1 YK62_CAEEL	P34341 caenorhabdi
32	29	70.7	1059	1 CAPU_DROME	Q24120 drosophila
33	29	70.7	1790	1 SEPA_EMENI	P78621 emericecella

34 28 68.3 113 1 FLIT_BACSU P39740 bacillus su
35 28 68.3 172 1 IPYR_RICPR Q9zcw5 rickettsia
36 28 68.3 249 1 YAT6_RHOBL P05449 rhodospaudo
37 28 68.3 313 1 YOAM_BACSU P45910 bacillus su
38 28 68.3 324 1 IDSA_METTM Q53479 methanobact
39 28 68.3 335 1 UL16_HSV6U P24442 human herpe
40 28 68.3 356 1 GBAL_DICTDI P16894 dictyostell
41 28 68.3 428 1 DGTP_MYCSM O52199 mycobacteri
42 28 68.3 459 1 NEK3_HUMAN P51956 homo sapien
43 28 68.3 477 1 URT1_DESRO P98119 desmodus ro
44 28 68.3 477 1 URT2_DESRO P55638 desmodus ro
45 28 68.3 494 1 GPPA_ECOLI P25552 escherichia

ALIGNMENTS

RESULT 1

ID	BIEA_RAT	STANDARD	PRT	295 AA
AC	P46844			
DT	01-NOV-1995 (Rel. 32, Created)			
DT	01-NOV-1995 (Rel. 32, Last sequence update)			
DT	15-JUL-1999 (Rel. 38, Last annotation update)			
DE	Biliverdin reductase A precursor (EC 1.3.1.24) (Biliverdin-IX alpha-reductase).			
DE	BLVRA OR BLVR.			
GN	Rattus norvegicus (Rat).			
OS	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.			
OX	NCBI_TaxID=10116;			
RN	[1]			
RP	SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.			
RC	TISSUE=Kidney;			
RX	MEDLINE=92156147; PubMed=1371282;			
RA	Fakhrai H., Maines M.D.;			
RT	"Expression and characterization of a cDNA for rat kidney biliverdin reductase. Evidence suggesting the liver and kidney enzymes are the same transcript product".			
RT	J. Biol. Chem. 267:4023-4029(1992).			
RL	[2]			
RN	MUTAGENESIS.			
RP	MEDLINE=94291657; PubMed=8020496;			
RX	McCoubrey W.K. Jr., Maines M.D.;			
RA	"Site-directed mutagenesis of cysteine residues in biliverdin reductase. Roles in substrate and cofactor binding.";			
RT	Eur. J. Biochem. 222:597-603(1994).			
RL	-1- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN; DISPLAYS TWO DISTINCT PH OPTIMA USING A DIFFERENT COFACTOR AT EACH PH: NADH AT THE LOWER PH 6.7-6.9 RANGE AND NADPH AT PH 8.5-8.7. NADPH, HOWEVER, IS THE PROBABLE COFACTOR IN BIOLOGICAL SYSTEMS.			
CC	-1- CATALYTIC ACTIVITY: Bilirubin + NAD(P)(+) = biliverdin + NAD(P)H.			
CC	-1- COFACTOR: BINDS ONE ZINC ION.			
CC	-1- PATHWAY: FINAL STEP IN HEME METABOLISM.			
CC	-1- SUBUNIT: MONOMER (BY SIMILARITY).			
CC	-1- SUBCELLULAR LOCATION: Cytoplasmic.			
CC	-1- SIMILARITY: TO E. COLI YHHX.			
CC	THIS SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announcement/ or send an email to license@isb-sib.ch).			
CC	EMBL; M81681; AAA40830.1; -			
DR	InterPro: IPR000683; GFO_IDH_MOCA.			
DR	Pfam: PF01408; GFO_IDH_MOCA; 1.			
KW	Oxidoreductase; NAD; NADP; Zinc.			
FT	PROPEP 1 2			
FT	CHAIN 3 295			
FT	DOMAIN 11 16			
FT	BILIVERDIN REDUCTASE A.			
FT	POLY-VAL.			

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FT METAL 279 ZINC (POTENTIAL).
FT METAL 280 ZINC (POTENTIAL).
FT METAL 291 ZINC (POTENTIAL).
FT METAL 292 ZINC (POTENTIAL).
FT METAL 293 C->A: LOSS OF ACTIVITY.
FT MUTAGEN 280 C->A: REDUCED ACTIVITY.
FT MUTAGEN 291 C->A: REDUCED ACTIVITY.
SQ SEQUENCE 295 AA; 219C8EA96C150588 CRC64;

Query Match 100.0%; Score 41; DB 1; Length 295;
Best Local Similarity 100.0%; Pred. No. 0.15;
Matches -7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
    |||||
Db 274 KKRIMHC 280

RESULT 2
BIEA_HUMAN STANDARD; PRT; 296 AA.
AC P53004;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Blliverdin reductase A precursor (EC 1.3.1.24) (Blliverdin-IX alpha-
DE reductase).
GN BLVRA OR BLVR OR BVR.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Placenta;
RX MEDLINE=96202961; PubMed=8631357;
RA Maines M.D., Polevoda B.V., Huang T.-J., McCoubrey W.K. Jr.;
RT "Human blliverdin IXalpha reductase is a zinc-metalloprotein.
RT Characterization of purified and Escherichia coli expressed
RT enzymes".
RL Eur. J. Biochem. 235:372-381(1996).
RN [2]
RP SEQUENCE FROM N.A.
RA Komuro A., Tobe T., Nakano Y., Yamaguchi T., Tomita M.;
RP Submitted (JAN-1996) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE OF 1-117 FROM N.A.
RA Cordes M., Wollam C., Carter T.;
RP Submitted (JUN-1998) to the EMBL/GenBank/DBJ databases.
RN [4]
RP SEQUENCE OF 3-36; 48-74 AND 228-248.
RC TISSUE=Liver;
RX MEDLINE=93143333; PubMed=8424666;
RA Maines M.D., Trakshel G.M.;
RT "Purification and characterization of human blliverdin reductase.";
RL Arch. Biochem. Biophys. 300:320-326(1993).
RN [5]
RP SEQUENCE OF 3-22.
RC TISSUE=Liver;
RX MEDLINE=95014177; PubMed=7929092;
RA Yamaguchi T., Komoda Y., Nakajima H.;
RT "Blliverdin-IX alpha reductase and blliverdin-IX beta reductase from
RT human liver. Purification and characterization.";
RL J. Biol. Chem. 269:24343-24348(1994).
CC -1- FUNCTION: CONVERTS BILIVERDIN TO BILIRUBIN.
CC -1- CATALYTIC ACTIVITY: Bllirubin + NAD(P)(+) = blliverdin + NAD(P)H.
CC -1- COFACTOR: BINDS ONE ZINC ION. HAS DUAL PH/COFACTOR (NADH, NADPH)
CC SPECIFICITY. USES NADH AT THE ACIDIC PH RANGE (6-6.7) AND NADPH AT
CC THE ALKALINE RANGE (8.5-8.7).
CC -1- PATHWAY: FINAL STEP IN HEME METABOLISM.
CC -1- SUBUNIT: MONOMER.
CC -1- SUBCELLULAR LOCATION: Cytoplasmic.
CC -1- TISSUE SPECIFICITY: LIVER.

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CC -1- SIMILARITY: TO E.COLI YHHX.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; X93086; CAA63635.1; -
DR EMBL; U34877; AAC35588.1; -
DR EMBL; AC005189; AAC25526.1; -
DR MIM; 109750; -
DR InterPro; IPR000683; GFO_IDH_MocA.
DR Pfam; PF01408; GFO_IDH_MocA; 1.
KW Oxidoreductase; NAD; NADP; Zinc.
FT PROPEP 1 2
FT CHAIN 3 296 BILIVERDIN REDUCTASE A.
FT DOMAIN 11 16 POLY-VAL.
FT METAL 280 280 ZINC (POTENTIAL).
FT METAL 281 281 ZINC (POTENTIAL).
FT METAL 292 292 ZINC (POTENTIAL).
FT METAL 293 293 ZINC (POTENTIAL).
FT CONFLICT 3 3 A -> T (IN REF. 2).
FT CONFLICT 154 155 SD -> AG (IN REF. 2).
FT CONFLICT 160 160 D -> E (IN REF. 2).
SQ SEQUENCE 296 AA; 33488 MW; 0DFD3B386F4DFC0A CRC64;

Query Match 92.7%; Score 38; DB 1; Length 296;
Best Local Similarity 85.7%; Pred. No. 0.62;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
    |||||
Db 275 KKRILHC 281

RESULT 3
OASL_MOUSE STANDARD; PRT; 473 AA.
AC G922F2;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE 54 kDa 2'-5'-oligoadenylate synthetase like protein (EC 2.7.7.-) (p54
DE OASL) (P54OASL) (M1204).
GN OASL.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Spleen;
RX MEDLINE=99323969; PubMed=10395668;
RA Tiefertalier M., Marksteiner R., Neyer S., Koch F., Hofer S.,
RA Schuler G., Nussenzweig M., Schneider R., Heufler C.;
RT "M1204, a novel 2',5' oligoadenylate synthetase with a ubiquitin-like
RT extension, is induced during maturation of murine dendritic cells.";
RL J. Immunol. 163:760-765(1999).
CC -1- FUNCTION: MAY PLAY A ROLE IN MEDIATING RESISTANCE TO VIRUS
CC INFECTION, CONTROL OF CELL GROWTH, DIFFERENTIATION, AND APOPTOSIS.
CC -1- CATALYTIC ACTIVITY: BINDS DOUBLE-STRANDED RNA AND POLYMERIZES ATP
CC INTO PP(A2'P5'A)N OLIGOMERS, WHICH ACTIVATE THE LATENT RNASE L
CC THAT, WHEN ACTIVATED, CLEAVES SINGLE-STRANDED RNAS.
CC -1- TISSUE SPECIFICITY: STRONGLY EXPRESSED IN SPLEEN DENDRITIC CELLS,
CC WHEREAS, IN BONE MARROW-DERIVED DENDRITIC CELLS, THE AMOUNT
CC INCREASES DURING THE MATURATION PROCESS. EXPRESSED IN MANY ORGANS,
CC THE HIGHEST LEVELS BEING IN THYMUS, LUNG, AND BONE MARROW.
CC -1- SIMILARITY: BELONGS TO THE 2-5A SYNTHETASE FAMILY.
CC -1- SIMILARITY: CONTAINS 1 UBIQUITIN-LIKE DOMAIN.
CC -1- CAUTION: THIS MAY NOT BE THE TRUE ORTHOLOG OF HUMAN OASL.

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CC EMBL: AF068835; AAD02818.1; -
CC MGI: MGI:1344390; Qasli.
CC InterPro: IPR001797; 25A_Synth.
CC InterPro: IPR001201; PAP_25A_core.
CC InterPro: IPR000626; Ubiquitin.
CC Pfam: PF00240; ubiquitin; 1.
CC PROSITE: PS00832; 25A_SYNTH_1; FALSE_NEG.
CC PROSITE: PS00833; 25A_SYNTH_2; 1.
CC PROSITE: PS0152; 25A_SYNTH_3; 1.
CC PROSITE: PS0053; UBIQUITIN_2; FALSE_NEG.
CC RNA-binding; Transferase; Nucleotidyltransferase.
CC DOMAIN 435 473 UBIQUITIN-LIKE.
CC SEQUENCE 473 AA; 54625 MW; 570E0E08A51C8460 CRC64;

Query Match 85.4%; Score 35; DB 1; Length 473;
Best Local Similarity 71.4%; Pred. No. 4.2;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

Cc 1 KKRIMHC 7
Db 109 KKRIMHC 115

RESULT 4
PIPL_YEAST
ID PIPL_YEAST STANDARD; PRT; 925 AA.
AC P40020;
DT 01-FEB-1995 (Rel. 31, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE Polymerase-interacting protein 1 (Factor interacting with REF).
GN PIPL OR FIR1 OR YER032W.
OS Saccharomyces cerevisiae (Baker's yeast).
OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC Saccharomycetales; Saccharomycetaceae; Saccharomycetes.
OX NCBI_TaxID=4932;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-W303;
RA del Olmo M., Gross S., Moore C.L.;
RN Submitted (FEB-1997) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN-S288C / AB972;
RA Dietrich F.S., Mulligan J.T., Hennessey K.M., Allen E., Araujo R., Aviles E., Berno A., Brennan T., Carpenter J., Chen E., Cherry J.M., Chung E., Duncan M., Guzman E., Hartzell G., Hunnicke-Smith S., Hyman R., Kayser A., Komp C., Lashkari D., Lew H., Lin D., Mosedale D., Nakahara K., Namath A., Norgren R., Oefner P., Oh C., Patel F.X., Roberts D., Sehl P., Schramm S., Shogren T., Smith V., Taylor P., Wei Y., Yelton M., Botstein D., Davis R.W.;
RN Submitted (DEC-1994) to the EMBL/GenBank/DBJ databases.
RN [3]
RP CHARACTERIZATION.
RX MEDLINE-97339480; PubMed-9196079;
RA Ruskak R., Pereira S., Platt T.;
RT "RNA binding analysis of yeast REF2 and its two-hybrid interaction with a new gene product, FIR1";
RL Gene Expr. 6:241-258(1996).
CC -!- FUNCTION: Interacts with poly(A) polymerase and with REF2.

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CC EMBL: U17262; AAB46625.1; -
CC EMBL: U18778; AAB64565.1; -
CC SGD: S0000834; FIR1.
CC CONFLICT 663 663 R -> P (IN REF. 2).
CC SEQUENCE 925 AA; 104701 MW; 707D9839EE31322B CRC64;

Query Match 80.5%; Score 33; DB 1; Length 925;
Best Local Similarity 71.4%; Pred. No. 22;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Cc 1 KKRIMHC 7
Db 841 KKRIMHC 847

RESULT 5
FKB2_MOUSE
ID FKB2_MOUSE STANDARD; PRT; 140 AA.
AC P45878;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE FK506-binding protein precursor (FKBP-13) (Peptidyl-prolyl cis-trans isomerase) (FKBP) (EC 5.2.1.8).
GN FKBP2 OR FKBP13.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-129/SVJ; TISSUE=Liver;
RX MEDLINE-94085790; PubMed-7505249;
RA Hendrickson B.A., Zhang W., Craig R.J., Jin Y.J., Bierer R.E., Burakoff S.J., Dilella A.G.;
RT "Structural organization of the genes encoding human and murine FK506-binding protein (FKBP) 13 and comparison to FKBP1.";
RL Gene 134:271-275(1993).
CC -!- FUNCTION: PPIases accelerate the folding of proteins. May function as a component of membrane cytoskeletal scaffolds.
CC -!- CATALYTIC ACTIVITY: CIS-TRANS ISOMERIZATION OF PROLINE IMIDIC PEPTIDE BONDS IN OLIGOPEPTIDES.
CC -!- ENZYME REGULATION: INHIBITED BY BOTH FK506 AND RAPAMYCIN.
CC -!- SUBUNIT: Interacts with the C-terminal domain of 4.1G.
CC -!- SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM LUMEN. MEMBRANE ASSOCIATED (PROBABLE).
CC -!- SIMILARITY: BELONGS TO THE FKBP-TYPE PPIASE FAMILY.

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CC EMBL: M77831; AAA37631.1; -
CC HSP; P20081; 1YAT.
CC MGI: MGI:95542; FKBP2.
CC InterPro: IPR001179; FKBP_PPIase.
CC Pfam: PF00254; FKBP; 1.
CC PROSITE: PS00453; FKBP_PPIASE_1; 1.
CC PROSITE: PS00454; FKBP_PPIASE_2; 1.
CC PROSITE: PS00509; FKBP_PPIASE_3; 1.
CC Isomerase; Rotamase; Signal; Endoplasmic reticulum.
CC SIGNAL 1 22 POTENTIAL.
CC CHAIN 23 140 FK506-BINDING PROTEIN.
CC SITE 137 140 PREVENT SECRETION FROM ER (POTENTIAL).

SQ SEQUENCE 140 AA; 15344 MW; F4E7FCC7766A0416 CRC64;
 Query Match 78.0%; Score 32; DB 1; Length 140;
 Best Local Similarity 71.4%; Pred. No. 5.4;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
 |||: ||
 Db 34 KKRVDHC 40

RESULT 6
 FKBP2_HUMAN STANDARD; PRT; 141 AA.
 AC P26885;
 DT 01-AUG-1992 (Rel. 23, Created)
 DT 01-AUG-1992 (Rel. 23, Last sequence update)
 DT 15-JUL-1999 (Rel. 36, Last annotation update)
 DE FK506-binding protein precursor (FKBP-13) (peptidyl-prolyl cis-trans
 isomerase) (PPIase) (EC 5.2.1.8).
 GN FKBP2 OR FKBP13.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE-Colon carcinoma;
 RC MEDLINE=91319747; PubMed=1713687;
 RA Jin Y.-J., Albers M.W., Lane W.S., Bierer B.E., Schreiber S.L.,
 RA Burakoff S.J.;
 RT "Molecular cloning of a membrane-associated human FK506- and
 rapamycin-binding protein, FKBP-13";
 RL proc. Natl. Acad. Sci. U.S.A. 88:6677-6681(1991).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC MEDLINE=93112052; PubMed=1281998;
 RA Dilella A.G., Hawkins A., Craig R.J., Schreiber S.L., Griffin C.A.;
 RT "Chromosomal band assignments of the genes encoding human FKBP12 and
 FKBP13";
 RL Biochem. Biophys. Res. Commun. 189:819-823(1992).
 CC -!- FUNCTION: PPIASES ACCELERATE THE FOLDING OF PROTEINS.
 CC -!- CATALYTIC ACTIVITY: CIS-TRANS ISOMERIZATION OF PROLINE IMIDIC
 CC PEPTIDE BONDS IN OLIGOPEPTIDES.
 CC -!- ENZYME REGULATION: INHIBITED BY BOTH FK506 AND RAPAMYCIN.
 CC -!- SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM LUMEN. MEMBRANE
 CC ASSOCIATED (PROBABLE).
 CC -!- TISSUE SPECIFICITY: T-CELLS AND THYMUS.
 CC -!- SIMILARITY: BELONGS TO THE FKBP-TYPE PPIASE FAMILY.

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 CC EMBL; M65128; AAA58473.1; -;
 CC EMBL; M75099; AAA36563.1; -;
 CC PIR; JC1365; JC1365.
 CC HSSP; Q00688; 1PBK.
 CC MIW; 186946; -;
 CC InterPro: IPR001179; FKBP_PPIase.
 CC Pfam; PF00254; FKBP; 1.
 CC PROSITE; PS00453; FKBP_PPIASE_1; 1.
 CC PROSITE; PS00454; FKBP_PPIASE_2; 1.
 CC PROSITE; PS00509; FKBP_PPIASE_3; 1.
 CC Isomerase; Rotamase; Signal; Endoplasmic reticulum; Polymorphism.
 FT SIGNAL 1 21
 FT CHAIN 22 141 FK506-BINDING PROTEIN.
 FT SITE 138 141 PREVENT SECRETION FROM ER (POTENTIAL).
 FT VARIANT 21 21 S -> TA.

FT VARIANT 24 24 /FTid=VAR_006410.
 FT T -> A.
 FT /FTid=VAR_006411.
 FT VARIANT 96 96 Y -> C.
 FT /FTid=VAR_006412.
 SQ SEQUENCE 141 AA; 15654 MW; 9F4751CA7D82D064 CRC64;
 Query Match 78.0%; Score 32; DB 1; Length 141;
 Best Local Similarity 71.4%; Pred. No. 5.4;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
 |||: ||
 Db 35 KKRVDHC 41

RESULT 7
 HYBA_ECOLI STANDARD; PRT; 328 AA.
 AC P37179;
 DT 01-OCT-1994 (Rel. 30, Created)
 DT 01-OCT-1994 (Rel. 30, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Hydrogenase-2 operon protein hyba precursor.
 GN HYBA OR B2996 OR Z4350 OR ECS3881.
 OS Escherichia coli, and
 OS Escherichia coli O157:H7.
 OC Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
 OC Escherichia.
 OX NCBI_TaxID=562, 83334;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=K12 / TGI;
 RC MEDLINE=94292472; PubMed=8021226;
 RA Menon N.K., Chatelus C.Y., Dervartanian M., Wendt J.C.,
 RA Shanmugam K.T., Peck H.D. Jr., Przybyla A.E.;
 RT "Cloning, sequencing, and mutational analysis of the hyb operon
 RT encoding Escherichia coli hydrogenase 2";
 RL J. Bacteriol. 176:4416-4423(1994).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC STRAIN=K12 / MG1655;
 RC MEDLINE=97426617; PubMed=9278503;
 RA Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
 RA Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
 RA Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
 RA Mau B., Shao Y.;
 RT "The complete genome sequence of Escherichia coli K-12";
 RL Science 277:1453-1474(1997).
 RN [3]
 RP SEQUENCE FROM N.A.
 RC STRAIN=O157:H7 / EDL933 / ATCC 700927;
 RC MEDLINE=21074935; PubMed=11206551;
 RA Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D.,
 RA Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A.,
 RA Posfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L.,
 RA Grobeck E.J., Davis N.W., Lim A., Dimalanta E.T., Potamousis K.,
 RA Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C.,
 RA Welch R.A., Blattner F.R.;
 RT "Genome sequence of enterohaemorrhagic Escherichia coli O157:H7";
 RL Nature 409:529-533(2001).
 RN [4]
 RP SEQUENCE FROM N.A.
 RC STRAIN=O157:H7 / RMD 0509952;
 RC MEDLINE=21156231; PubMed=11258796;
 RA Hayashi T., Makino K., Ohnishi M., Kurokawa K., Ishii K., Yokoyama K.,
 RA Han C.-G., Ohtsubo E., Nakayama K., Murata T., Tanaka M., Tobe T.,
 RA Iida T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasunaga T.,
 RA Kuhara S., Shiba T., Hattori M., Shinagawa H.;
 RT "Complete genome sequence of enterohaemorrhagic Escherichia coli
 RT O157:H7 and genomic comparison with a laboratory strain K-12";
 RL DNA Res. 8:11-22(2001).
 CC -!- FUNCTION: PARTICIPATES IN THE PERIPLASMIC ELECTRON-TRANSFERRING

CC ACTIVITY OF HYDROGENASE 2 DURING ITS CATALYTIC TURNOVER.
CC -1- COFACTOR: BINDS 3 4FE-4S CLUSTERS AND A 3FE-4S CLUSTER.
CC -1- SUBCELLULAR LOCATION: Periplasmic.
CC -1- SIMILARITY: THE IRON-SULFUR CENTERS ARE SIMILAR TO THOSE OF
CC 'BACTERIAL-TYPE' 4FE-4S FERREDOXINS.
CC -1- CAUTION: WAS ORIGINALLY (REF.1) THOUGHT TO BE THE SMALL SUBUNIT
CC OF HYDROGENASE 2.
CC -----
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CC -----
DR EMBL; U09177; AAA21589.1; -;
DR EMBL; U28377; AAA69163.1; -;
DR EMBL; AE000382; AAC76032.1; -;
DR EMBL; AE005529; AAG58133.1; -;
DR EMBL; AP002363; BAB37304.1; -;
DR HSSP; P55907; 1XER.
DR Ecogene; EGI1799; Hyba.
DR InterPro; IPR001450; 4Fe4S_ferredoxin.
DR Pfam; PF00037; fer4; 1.
DR PROSITE; PS00198; 4FE4S_FERREDOXIN; 1.
KW Oxidoreductase; Signal; Periplasmic; Iron-sulfur; 4Fe-4S; 3Fe-4S;
KW Complete proteome.
FT CHAIN 1 27 POTENTIAL.
FT SIGNAL 28 328 HYDROGENASE-2 OPERON PROTEIN HYBA.
FT METAL 47 47 IRON-SULFUR 1 (4FE-4S) (POTENTIAL).
FT METAL 50 50 IRON-SULFUR 1 (4FE-4S) (POTENTIAL).
FT METAL 53 53 IRON-SULFUR 1 (4FE-4S) (POTENTIAL).
FT METAL 57 57 IRON-SULFUR 1 (4FE-4S) (POTENTIAL).
FT METAL 112 112 IRON-SULFUR 2 (3FE-4S) (POTENTIAL).
FT METAL 115 115 IRON-SULFUR 2 (3FE-4S) (POTENTIAL).
FT METAL 120 120 IRON-SULFUR 2 (3FE-4S) (POTENTIAL).
FT METAL 124 124 IRON-SULFUR 2 (3FE-4S) (POTENTIAL).
FT METAL 145 145 IRON-SULFUR 3 (4FE-4S) (POTENTIAL).
FT METAL 148 148 IRON-SULFUR 3 (4FE-4S) (POTENTIAL).
FT METAL 151 151 IRON-SULFUR 3 (4FE-4S) (POTENTIAL).
FT METAL 155 155 IRON-SULFUR 3 (4FE-4S) (POTENTIAL).
FT METAL 174 174 IRON-SULFUR 4 (4FE-4S) (POTENTIAL).
FT METAL 177 177 IRON-SULFUR 4 (4FE-4S) (POTENTIAL).
FT METAL 193 193 IRON-SULFUR 4 (4FE-4S) (POTENTIAL).
FT METAL 197 197 IRON-SULFUR 4 (4FE-4S) (POTENTIAL).
SQ SEQUENCE 328 AA; 36003 MW; 77203A0F50F61662 CRC64;

Query Match 78.0%; Score 32; DB 1; Length 328;
Best Local Similarity 71.4%; Pred. No. 13;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
||: |||
Db 109 KKQCMHC 115

RESULT 8
DTR2_HUMAN
ID DTR2_HUMAN STANDARD; PRT; 528 AA.
AC Q92630;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Dual-specificity tyrosine-phosphorylation regulated kinase 2
DE (EC 2.7.1.-).
GN DYRK2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.

RC TISSUE=Brain;
RX MEDLINE=98421512; PubMed=9748265;
RA Becker W., Weber Y., Wetzel K., Eirmbter K., Tejedor F.J.,
RA Joost H.-G.;
RT "Sequence characteristics, subcellular localization, and substrate
RT specificity of DYRK-related kinases, a novel family of dual
RT specificity protein kinases";
RL J. Biol. Chem. 273:25893-25902(1998).
RN [2]
RP SEQUENCE OF 320-528 FROM N.A.
RC TISSUE=Placenta;
RA Becker W., Joost H.-G.;
* RA Submitted (NOV-1996) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: IN VITRO; CAN PHOSPHORYLATE HISTONES H3 AND H2B ON SER
CC AND THR RESIDUES. MAY BE INVOLVED IN THE REGULATION OF CELLULAR
CC GROWTH AND/OR DEVELOPMENT.
CC -1- SUBCELLULAR LOCATION: Cytoplasmic.
CC -1- PTM: AUTOPHOSPHORYLATED ON TYR RESIDUES.
CC -1- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
CC MNB/DYRK SUBFAMILY.
CC -----
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CC -----
DR EMBL; Y13493; CAA73885.1; -;
DR EMBL; Y09216; CAA70418.1; -;
DR HSSP; Q16539; 1WFC.
DR MIM; 603496; -;
DR InterPro; IPR000719; Euk_pkinase.
DR InterPro; IPR002290; Ser_thr_pkinase.
DR Pfam; PF00069; pkinase; 2.
DR SMART; SM00220; S_TKc; 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS00011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
KW Transferase; Serine/threonine-protein kinase; Tyrosine-protein kinase;
KW ATP-binding; Phosphorylation.
FT DOMAIN 149 462 PROTEIN KINASE.
FT NP_BIND 155 163 ATP (BY SIMILARITY).
FT BINDING 178 178 ATP (BY SIMILARITY).
FT ACT_SITE 275 275 BY SIMILARITY.
SQ SEQUENCE 528 AA; 59714 MW; AF2C6822ED9522D7 CRC64;

Query Match 78.0%; Score 32; DB 1; Length 528;
Best Local Similarity 71.4%; Pred. No. 20;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
||: |||
Db 268 KNRIHC 274

RESULT 9
AMPI_LYCES
ID AMPI_LYCES STANDARD; PRT; 571 AA.
AC Q10712; Q9S9A3;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Aminopeptidase 1, chloroplast precursor (EC 3.4.11.1) (Leucine
DE aminopeptidase) (LAP) (Leucyl aminopeptidase) (Proline aminopeptidase)
DE (EC 3.4.11.5) (Prolyl aminopeptidase) (DR57).
GN LAP1 OR LAP OR LAP2.
OS Lycopersicon esculentum (Tomato).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
OC Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
OX NCBI_TaxID=4081;

RN RP SEQUENCE FROM N.A.
 RC STRAIN=CV. PETO 238R; TISSUE=Leaf;
 RX MEDLINE=96421572; PubMed=8824220;
 RA Gu Y.Q., Chao W.S., Walling L.L.;
 RT "Localization and post-translational processing of the wound-induced
 RL leucine aminopeptidase proteins of tomato.";
 RL J. Biol. Chem. 271:25880-25887(1996).
 RN [2]
 RP SEQUENCE OF 49-571 FROM N.A.
 RC STRAIN=CV. VF36; TISSUE=Platyl;
 RX MEDLINE=95375233; PubMed=7647301;
 RA Milligan S.B., Gasser C.S.;
 RT "Nature and regulation of pistil-expressed genes in tomato.";
 RL Plant Mol. Biol. 28:691-711(1995).
 RN [3]
 RP SEQUENCE OF 103-571 FROM N.A.
 RC STRAIN=CV. PETO 238R; TISSUE=Leaf;
 RX MEDLINE=94052201; PubMed=8234334;
 RA Pautot V., Holzer F.M., Reisch B., Walling L.L.;
 RT "Leucine aminopeptidase: an inducible component of the defense
 response in Lycopodium obscurum (tomato).";
 RL Proc. Natl. Acad. Sci. U.S.A. 90:9906-9910(1993).
 CC -!- FUNCTION: PRESUMABLY INVOLVED IN THE PROCESSING AND REGULAR
 CC TURNOVER OF INTRACELLULAR PROTEINS.
 CC -!- CATALYTIC ACTIVITY: Release of an N-terminal amino acid, Xaa-|-
 CC Xbb-, in which Xaa is preferably Leu, but may be other amino acids
 CC including Pro although not Arg or Lys, and Xbb may be Pro.
 CC -!- COFACTOR: BINDS TWO ZINC IONS (BY SIMILARITY).
 CC -!- SUBCELLULAR LOCATION: Chloroplast.
 CC -!- INDUCTION: BY WOUNDING.
 CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY M17; ALSO KNOWN AS THE
 CC CYTOSOL AMINOPEPTIDASE FAMILY.
 CC -----
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 CC -----
 CC EMBL; U50151; AAC49456.1; -;
 CC EMBL; U50152; AAC49457.1; -;
 CC EMBL; U20593; AAA80498.1; -;
 CC HSP; P00727; 1LAM.
 CC MEROPS; M17.002.
 CC InterPro; IPR000819; Peptidase_M17.
 CC Pfam; PF00883; Peptidase_M17; 1.
 CC Pfam; PF02789; Peptidase_M17_N; 1.
 CC PRINTS; PR00481; LAMNOPPTDASE.
 CC PROSITE; PS00631; CYTOSOLAP; 1.
 KW Transit peptide; Chloroplast; Aminopeptidase; Hydrolase; Zinc.
 FT TRANSIT 1 53 CHLOROPLAST (POTENTIAL).
 FT CHAIN 54 571 AMINOPEPTIDASE 1.
 FT DOMAIN 169 174 POLY-ALA.
 FT METAL 342 342 ZINC 2 (BY SIMILARITY).
 FT METAL 347 347 ZINC 1 AND 2 (BY SIMILARITY).
 FT METAL 367 367 ZINC 2 (BY SIMILARITY).
 FT METAL 427 427 ZINC 1 (BY SIMILARITY).
 FT METAL 429 429 ZINC 1 AND 2 (BY SIMILARITY).
 FT ACT_SITE 354 354 POTENTIAL.
 FT ACT_SITE 431 431 POTENTIAL.
 FT VARIANT 358 358 R -> G.
 FT CONFLICT 271 271 P -> N (IN REF. 2).
 FT CONFLICT 315 315 T -> S (IN REF. 3).
 FT CONFLICT 515 515 T -> L (IN CLONE PBLAP2).
 SQ SEQUENCE 571 AA; 60279 MW; C7A224837E73939D CRC64;

Query Match

78.08; Score 32; DB 1; Length 571;

Best Local Similarity 83.38; Pred. No. 22;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRIMHC 7
 DB 48 KRIVHC 53
 RESULT 10
 AMPL_SOLUTU
 ID AMPL_SOLUTU STANDARD; PRT; 573 AA.
 AC P31427; 1993 (Rel. 26, Created)
 DT 01-JUL-1993 (Rel. 34, Last sequence update)
 DT 01-OCT-1996 (Rel. 41, Last annotation update)
 DE 01-MAR-2002 (Rel. 41, Last annotation update)
 DE Aminopeptidase, chloroplast precursor (EC 3.4.11.1) (Leucine
 DE aminopeptidase) (LAP) (Leucyl aminopeptidase) (Proline aminopeptidase)
 DE (EC 3.4.11.5) (Prolyl aminopeptidase).
 GN LAP.
 OS Solanum tuberosum (Potato).
 OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
 OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
 OC Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
 OX NCBI_TaxID=4113;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=CV. DESIREE;
 RX MEDLINE=94339796; PubMed=7765119;
 RA Herbers K., Prat S., Willmitzer L.;
 RT "Functional analysis of a leucine aminopeptidase from Solanum
 RT tuberosum L.";
 RL Planta 194:230-240(1994).
 RN [2]
 RP SEQUENCE OF 19-573 FROM N.A.
 RC STRAIN=CV. DESIREE; TISSUE=Leaf;
 RX MEDLINE=93005746; PubMed=1392612;
 RA Hildmann T., Ebneth M., Pena-Cortes H., Sanchez-Serrano J.J.,
 RA Willmitzer L., Prat S.;
 RT "General roles of abscisic and jasmonic acids in gene activation as a
 RT result of mechanical wounding.";
 RL Plant Cell 4:1157-1170(1992).
 CC -!- FUNCTION: PRESUMABLY INVOLVED IN THE PROCESSING AND REGULAR
 CC TURNOVER OF INTRACELLULAR PROTEINS.
 CC -!- CATALYTIC ACTIVITY: Release of an N-terminal amino acid, Xaa-|-
 CC Xbb-, in which Xaa is preferably Leu, but may be other amino acids
 CC including Pro although not Arg or Lys, and Xbb may be Pro.
 CC -!- COFACTOR: BINDS TWO ZINC IONS (BY SIMILARITY).
 CC -!- SUBUNIT: HOMOHETEROMER (PROBABLE).
 CC -!- SUBCELLULAR LOCATION: Chloroplast (By similarity).
 CC -!- TISSUE SPECIFICITY: IN TUBERS AND FLORAL BUDS OF UNTREATED PLANTS.
 CC AFTER ABA TREATMENT OR MECHANICAL WOUNDING IS MOSTLY ACCUMULATED
 CC IN LEAVES, TO A LESSER EXTENT IN STEMS, BUT NOT IN ROOTS.
 CC -!- INDUCTION: BY ABSICISIC ACID (ABA), JASMONIC ACID (JA) AND
 CC WOUNDING.
 CC -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY M17; ALSO KNOWN AS THE
 CC CYTOSOL AMINOPEPTIDASE FAMILY.
 CC -----
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 CC -----
 CC EMBL; X77015; CAA54314.1; -;
 CC EMBL; X67845; CAA48038.1; -;
 CC PIR; S24769; S24769.
 CC PIR; PQ0470; PQ0470.
 CC HSP; P00727; 1LAM.
 CC MEROPS; M17.002; -;
 CC InterPro; IPR000819; Peptidase_M17.
 CC Pfam; PF00883; Peptidase_M17; 1.
 CC Pfam; PF02789; Peptidase_M17_N; 1.
 CC PRINTS; PR00481; LAMNOPPTDASE.
 CC PROSITE; PS00631; CYTOSOLAP; 1.

KW Transit peptide; Chloroplast; Aminopeptidase; Hydrolase; Zinc.
FT CHAIN 1 53 CHLOROPLAST (POTENTIAL).
FT DOMAIN 169 174 AMINOPEPTIDASE.
FT METAL 342 347 POLY-ALA.
FT METAL 347 347 ZINC 2 (BY SIMILARITY).
FT METAL 367 367 ZINC 1 AND 2 (BY SIMILARITY).
FT METAL 427 427 ZINC 2 (BY SIMILARITY).
FT METAL 427 427 ZINC 1 (BY SIMILARITY).
FT METAL 429 429 ZINC 1 AND 2 (BY SIMILARITY).
FT ACT_SITE 354 354 POTENTIAL.
FT ACT_SITE 431 431 POTENTIAL.
SQ SEQUENCE 573 AA; 60122 MW; 31521454A47FB291 CRC64;

Query Match 78.0%; Score 32; DB 1; Length 573;

Best Local Similarity 83.3%; Pred. No. 22;

Matches 5; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRIMHC 7

Db 48 KRIVHC 53

RESULT 11

RL44_TRYBB STANDARD; PRT; 105 AA.
AC PL7843;
DT 01-AUG-1990 (Rel. 15, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE 60S ribosomal protein L44.
GN RPL44.
OS Trypanosoma brucei brucei.
OC Eukaryota; Euglenozoa; Kinetoplastida; Trypanosomatidae; Trypanosoma.
OX NCBI_TaxID=5702;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=EATRO 1125;
RX MEDLINE=90251460; PubMed=2339065;
RA Tebabi P., Halleux S., Pays E.;
RT "Nucleotide sequence of a full-length cDNA coding for the ribosomal L44 protein of Trypanosoma brucei."
RL Nucleic Acids Res. 18:2809-2809(1990).
CC -1- SUBCELLULAR LOCATION: Cytoplasmic.
CC -1- SIMILARITY: BELONGS TO THE L44E FAMILY OF RIBOSOMAL PROTEINS.
CC -----
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CC -----
CC EMBL; X52122; CAA36367.1; -.
DR PIR; S10012; R6UT6A.
DR InterPro; IPR000552; Ribosomal_L44E.
DR Pfam; PF00935; Ribosomal_L44; 1.
DR ProDom; PD002841; Ribosomal_L44E; 1.
DR ProSite; PS01172; RIBOSOMAL_L44E; 1.
KW Ribosomal protein.
FT INIT_MET 0 0 BY SIMILARITY.
SQ SEQUENCE 105 AA; 12322 MW; FA19423F109E7819 CRC64;

Query Match 75.6%; Score 31; DB 1; Length 105;

Best Local Similarity 71.4%; Pred. No. 6.5;

Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 KRIMHC 7

Db 5 KKKMHC 11

RESULT 12

Y091_NPVOP STANDARD; PRT; 279 AA.
AC O10341;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE Hypothetical 29.3 kDa protein (ORF92).
OS Orgyia pseudotsugata multicapsid polyhedrosis virus (OPMNPV).
OC Viruses; dsDNA viruses, no RNA stage; Baculoviridae;
OC Nucleopolyhedrovirus.
OX NCBI_TaxID=164623;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=97271300; PubMed=9126251;
RA Ahrens C.H., Russell R.R., Funk C.J., Evans J., Harwood S.,
RA Rohrmann G.F.;
RT "The sequence of the Orgyia pseudotsugata multinucleocapsid nuclear
RT polyhedrosis virus genome.";
RL Virology 229:381-399(1997).
CC -1- SIMILARITY: TO CORRESPONDING ORF IN ACMNPV.
CC -----
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CC -----
CC EMBL; U75930; AAC59091.1; -.
DR Hypothetical protein.
KW Hypothetical protein.
SQ SEQUENCE 279 AA; 29289 MW; 6FA4DAA01009DBF0 CRC64;

Query Match 75.6%; Score 31; DB 1; Length 279;

Best Local Similarity 66.7%; Pred. No. 17;

Matches 4; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRIMHC 7

Db 233 QRVHMC 238

RESULT 13

CYCH_XENLA STANDARD; PRT; 323 AA.
ID CYCH_XENLA
AC P51947;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Cyclin H (MO15-associated protein) (p36).
GN CCNH.
OS Xenopus laevis (African clawed frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipidae;
OC Xenopodinae; Xenopus.
OX NCBI_TaxID=8355;
RN [1]
RP SEQUENCE FROM N.A.
RA Martinez A.-M.;
RL Submitted (JAN-1995) to the EMBL/GenBank/DBJ databases.
RN [2]
RP PARTIAL SEQUENCE.
RC TISSUE=Oocyte;
RX MEDLINE=95045408; PubMed=7957080;
RA Labbe J.-C., Martnez A.-M., Fesquet D., Capony J.-P., Darbon J.-M.,
RA Derancourt J., Devault A., Morin N., Cavadore J.-C., Doree M.;
RT "p40MO15 associates with a p36 subunit and requires both nuclear
RT translocation and Thr176 phosphorylation to generate cdk-activating
RT kinase activity in Xenopus oocytes.";
RL EMBO J. 13:5153-5164(1994).
CC -1- FUNCTION: Regulates CDK7, the catalytic subunit of the CDK-
CC activating kinase (CAK) enzymatic complex. CAK activates the
CC cyclin-associated kinases CDC2/CDK1, CDK2, CDK4 and CDK6 by

CC threonine phosphorylation. CAK complexed to the core-TFIIF basal
 CC transcription factor activates RNA polymerase II by serine
 CC phosphorylation of the repetitive carboxyl-terminus domain (CTD)
 CC of its large subunit (POLR2A), allowing its escape from the
 CC promoter and elongation of the transcripts. Involved in cell cycle
 CC control and in RNA transcription by RNA polymerase II. Its
 CC expression and activity are constant throughout the cell cycle (By
 CC similarity).
 CC -!- SUBUNIT: Associates primarily with CDK7 and MAT1 to form the
 CC CAK complex. CAK can further associate with the core-TFIIF to
 CC form the TFIIF basal transcription factor.
 CC -!- SUBCELLULAR LOCATION: Nuclear.
 CC -!- SIMILARITY: BELONGS TO THE CYCLIN FAMILY. CYCLIN C SUBFAMILY.
 CC -----
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 CC -----
 CC EMBL; U20505; AAA62236.1; -;
 CC HSP; P51946; IJWK.
 CC InterPro: IPR000553; Cyclin.
 CC Pfam; PF00134; cyclin; 1.
 CC SMART; SM00385; CYCLIN; 1.
 CC PROSITE; PS00292; CYCLINS; FALSE_NEG.
 CC Transcription regulation; Cell cycle; Nuclear protein; Cyclin;
 KW Phosphorylation.
 FT CONFLICT 266 266 R -> Y (IN REF. 2; AA SEQUENCE).
 SQ SEQUENCE 323 AA; 37600 MW; 14BCDCA00843DC8 CRC64;

Query Match 75.6%; Score 31; DB 1; Length 323;
 Best Local Similarity 71.4%; Pred. No. 20;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 KKRIMHC 7
 III: II
 DB 274 KKRDLHC 280

RESULT 14
 SUN_HAEIN STANDARD; PRT; 451 AA.
 AC P44788;
 DT 01-NOV-1995 (Rel. 32, Created)
 DT 01-NOV-1995 (Rel. 32, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE SUN protein (FMU protein).
 GN SUN OR FMU OR HI0624.
 OS Haemophilus influenzae.
 OC Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae;
 OC Haemophilus.
 OX NCBI_TaxID=727;
 RN [1]
 RC SEQUENCE FROM N.A.
 RP STRAIN-RD / KW20 / ATCC 51907;
 RX MEDLINE=95350630; PubMed=7542800;
 RA Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F.,
 RA Karavay A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M.,
 RA McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D.,
 RA Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M.,
 RA Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D.,
 RA Uterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C.,
 RA Fine L.D., Frichman J.L., Fuhrmann J.B., Geoghagen N.S.M.,
 RA Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
 RA Venter J.C.;
 RT "Whole-genome random sequencing and assembly of Haemophilus
 RT influenzae Rd.";
 RL Science 269:496-512(1995).
 CC -!- SIMILARITY: BELONGS TO THE SUN (BACTERIAL) / NUCLEOLAR PROTEIN
 CC NOLI/NOP2 (EUKARYOTES) FAMILY.

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 CC -----
 CC EMBL; U32745; AAC22284.1; -;
 CC TIGR; HI0624; -;
 CC InterPro: IPR001678; Noli_Nop2_Sun.
 CC InterPro: IPR000139; Nusb.
 CC InterPro: IPR000051; SAM_bind.
 CC Pfam; PF01189; Noli_Nop2_Sun; 1.
 CC Pfam; PF01029; Nusb; 1.
 CC ProDom; PD005242; Nusb; 1.
 CC PROSITE; PS01153; NOLI_NOP2_SUN; 1.
 CC Complete proteome.
 KW SEQUENCE 451 AA; 50597 MW; D91FAB88FFDE34B0 CRC64;
 Query Match 75.6%; Score 31; DB 1; Length 451;
 Best Local Similarity 71.4%; Pred. No. 28;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 KKRIMHC 7
 III: III
 DB 88 KTRIVHC 94
 RESULT 15
 CUL3_HUMAN STANDARD; PRT; 768 AA.
 AC Q13618; O75415; Q9UB18; Q9UET7;
 DT 01-NOV-1997 (Rel. 35, Created)
 DT 16-OCT-2001 (Rel. 40, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Cullin homolog 3 (CUL-3).
 GN CUL3 OR KIRA0617.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RC SEQUENCE FROM N.A.
 RP MEDLINE=98406061; PubMed=9733711;
 Du M., Sansores-Garcia L., Zu Z., Wu K.K.;
 RT "Cloning and expression analysis of a novel salicylate suppressible
 RT gene, Hs-CUL-3, a member of cullin/Cdc53 family.";
 RL J. Biol. Chem. 273:24289-24292(1998).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Brain;
 RX MEDLINE=98403880; PubMed=9734811;
 Ishikawa K.-I., Nagase T., Suyama M., Miyajima N., Tanaka A.,
 RA Kotani H., Nomura N., Ohara O.;
 RT "Prediction of the coding sequences of unidentified human genes. X.
 RT The complete sequences of 100 new cDNA clones from brain which can
 RT code for large proteins in vitro.";
 RL DNA Res. 5:169-176(1998).
 RN [3]
 RC SEQUENCE FROM N.A.
 RP TISSUE=Colon carcinoma;
 RX MEDLINE=98326596; PubMed=9663463;
 Michel J.J., Xiong Y.;
 RA "Human CUL-1, but not other cullin family members, selectively
 RT interacts with SKP1 to form a complex with SKP2 and cyclin A.";
 RL Cell Growth Differ. 9:435-449(1998).
 RN [4]
 RP SEQUENCE OF 192-768 FROM N.A.
 RX MEDLINE=96279828; PubMed=8661378;
 Kipreos E.T., Lander L.E., Wing J.P., He W.W., Hedgecock E.M.;
 RA "cul-1 is required for cell cycle exit in C. elegans and identifies a

```
RT novel gene family." ;
RL Cell 85:829-839(1996).
RN [5]
RP SEQUENCE OF 426-768 FROM N.A.
RC TISSUE=Brain;
RA Yu W., Sarginson J., Gibbs R.A.;
RL Submitted (MAR-1998) to the EMBL/GenBank/DBJ databases.
CC -1- SIMILARITY: BELONGS TO THE CULLIN FAMILY.
CC -----
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CC -----
DR EMBL; AF064087; AAC36304.1; -
DR EMBL; AB014517; BAA31592.1; -
DR EMBL; AF062537; AAC36682.1; -
DR EMBL; U58089; AAC50546.1; -
DR EMBL; AF052147; AAC28621.1; -
DR MIM; 603136; -
DR InterPro; IPR001373; Cullin.
DR Pfam; PF00888; Cullin; 1.
DR SMART; SM00182; CULLIN; 1.
DR PROSITE; PS01256; CULLIN_1; 1.
DR PROSITE; PS50069; CULLIN_2; 1.
FT CONFLICT 13 13 D -> G (IN REF. 3).
FT CONFLICT 159 179 DHLRQTLDDMIARERKEVVD -> GSSTANSIGYDCKRAE
FT CONFLICT 426 451 RRSRS (IN REF. 3).
FT CONFLICT 451 DVFRYYKQHLARLLTNKSVSDDE -> MYLNVINNTW
FT CONFLICT 451 QGDFSQIKVFLMTLK (IN REF. 5).
SQ SEQUENCE 768 AA; 88930 MW; ALA02022480BF099 CRC64;

Query Match 75.6%; Score 31; DB 1; Length 768;
Best Local Similarity 66.7%; Pred. No. 47;
Matches 4; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 2 KRIMHC 7
Db 246 ERVMHC 251
```

Search completed: November 1, 2002, 14:47:46
Job time : 2.36013 secs

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: November 1, 2002, 14:43:58 ; Search time 0.742765 Seconds
(without alignments)
905.569 Million cell updates/sec

Title: US-09-606-129a-18
Perfect score: 41
Sequence: 1 KKRIMHC 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues
Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_71.*
1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed.
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	41	100.0	295	2 A42268	billiverdin reducta
2	41	100.0	633	2 T04537	hypothetical prote
3	38	92.7	296	2 G02086	billiverdin reducta
4	38	92.7	296	2 S62624	billiverdin reducta
5	36	87.8	512	2 H86206	hypothetical prote
6	34	82.9	401	2 F85015	probable phosphati
7	34	82.9	431	2 T01723	1-phosphatidylinos
8	33	80.5	189	2 A38117	hypothetical prote
9	33	80.5	189	2 AD2414	transposase ali486
10	33	80.5	189	2 AE2064	transposase ali206
11	33	80.5	189	2 AF2052	transposase ali197
12	33	80.5	189	2 AF2152	transposase alr277
13	33	80.5	189	2 AG1875	transposase alr055
14	33	80.5	189	2 AG2037	transposase alr185
15	33	80.5	508	2 T02486	hypothetical prote
16	33	80.5	925	2 S50490	hypothetical prote
17	32	78.0	107	2 B64845	hypothetical prote
18	32	78.0	107	2 A99791	hypothetical prote
19	32	78.0	107	2 D85651	hypothetical prote
20	32	78.0	140	2 I49688	binding protein -
21	32	78.0	142	2 JC1365	FK506/rapamycin-bi
22	32	78.0	328	2 B65086	hydrogenase (EC 1.
23	32	78.0	328	2 A91114	hydrogenase-2 smal
24	32	78.0	328	2 A85959	hydrogenase-2 smal
25	32	78.0	328	2 AE0885	hydrogenase-2 smal
26	32	78.0	377	2 AB2213	methylicitrate synt
27	32	78.0	497	2 C86463	hypothetical prote
28	32	78.0	516	2 T23827	hypothetical prote
29	32	78.0	521	2 C88827	protein M7.2 [mpo

30	32	78.0	566	2 T07850	leucyl aminopeptid
31	32	78.0	571	2 T07047	leucyl aminopeptid
32	32	78.0	571	2 T07849	leucyl aminopeptid
33	32	78.0	573	1 S41376	leucyl aminopeptid
34	32	78.0	590	2 G90127	hypothetical prote
35	31	75.6	100	2 A10092	probable membrane
36	31	75.6	106	1 R6UT6A	ribosomal protein
37	31	75.6	137	2 T46904	hypothetical prote
38	31	75.6	144	2 H41700	C6 protein - rabbi
39	31	75.6	152	2 T32784	hypothetical prote
40	31	75.6	279	2 T10361	hypothetical prote
41	31	75.6	321	2 T48373	hypothetical prote
42	31	75.6	383	2 S51651	cyclin delta-2 - A
43	31	75.6	451	1 F64155	hypothetical prote
44	31	75.6	476	2 T17330	hypothetical prote
45	31	75.6	504	2 JC4775	interferon-induced

ALIGNMENTS

RESULT 1

A42268
billiverdin reductase (EC 1.3.1.24) - rat
C:Species: Rattus norvegicus (Norway rat)
C:Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 05-Nov-1999
C:Accession: A42268
R:Fakhrai, H.; Maines, M.D.
J. Biol. Chem. 267, 4023-4029, 1992
A:Title: Expression and characterization of a cDNA for rat kidney billiverdin reductas
A:Reference number: A42268; MUID:92156147
A:Accession: A42268
A:Status: preliminary; not compared with conceptual translation
A:Molecule type: nucleic acid; protein
A:Residues: 1-295 <FAK>
A:Cross-references: GB:M81681; NID:g203177; PIDN:AAA40830.1; PID:g203178
A:Experimental source: kidney
A:Note: sequence extracted from NCBI backbone (NCBIP:82800)
C:Keywords: liver; oxidoreductase

Query Match 100.0%; Score 41; DB 2; Length 295;
Best Local Similarity 100.0%; Pred. No. 0.47;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
| | | | | | |
Db 274 KKRIMHC 280

RESULT 2

T04537
hypothetical protein F28J12.70 - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 14-May-1999
C:Accession: T04537
R:Bevan, M.; Hilbert, H.; Braun, M.; Holzer, E.; Brandt, A.; Duesterhoeft, A.; Bancro
submitted to the Protein Sequence Database, February 1998
A:Reference number: X15377
A:Accession: T04537
A:Molecule type: DNA
A:Residues: 1-633 <BEV>
A:Cross-references: EMBL:AL021710
A:Experimental source: cultivar Columbia; BAC clone F28J12
C:Genetics:
A:Map position: 4
A:Introns: 281/3; 303/3; 442/1; 614/3
A:Note: F28J12.70

Query Match 100.0%; Score 41; DB 2; Length 633;
Best Local Similarity 100.0%; Pred. No. 0.95;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7

|||||||
Db 591 KKRIMHC 597

RESULT 3
G02066
billerdin reductase (EC 1.3.1.24) - human
N:Alternate names: billeridin IX-alpha reductase
C:Species: Homo sapiens (man)
C:Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 17-Jul-1998
C:Accession: G02066
R:Komuro, A.; Tobe, T.; Nakano, Y.; Yamaguchi, T.; Tomita, M.
submitted to the EMBL Data Library, August 1995
A:Reference number: H00768
A:Accession: G02066
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-296 <KOM>
A:Cross-references: EMBL:U34877; NID:gl143231; PID:gl143232
C:Keywords: oxidoreductase

Query Match 92.7%; Score 38; DB 2; Length 296;
Best Local Similarity 85.7%; Pred. No. 2;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
|||||||
Db 275 KKRILHC 281

RESULT 4
S62624
billerdin reductase (EC 1.3.1.24) - human
N:Alternate names: billeridin IX-alpha reductase
C:Species: Homo sapiens (man)
C:Date: 28-Oct-1996 #sequence_revision 09-May-1997 #text_change 21-Jul-2000
C:Accession: S62624; S62622; S29736
R:Maines, M.D.; Polevoda, B.V.; Huang, T.J.; McCoubrey Jr., W.K.
Eur. J. Biochem. 235, 372-381, 1996
A:Title: Human billeridin IX-alpha reductase is a zinc-metalloprotein. Characterization
A:Reference number: S62622; MUID:96202961
A:Accession: S62624
A:Molecule type: mRNA
A:Residues: 1-296 <MAI>
A:Cross-references: EMBL:X93086; NID:gl246748; PIDN:CAA63635.1; PID:gl246749
A:Accession: S62622
A:Molecule type: protein
A:Residues: 3-24, 'X', 26-27, 'X', 29-36; 48-74; 228-234; 235-248 <MAF>
R:Maines, M.D.; Trakshel, G.M.
Arch. Biochem. Biophys. 300, 320-326, 1993
A:Title: Purification and characterization of human billeridin reductase.
A:Reference number: S29736; MUID:93143333
A:Accession: S29736
A:Molecule type: protein
A:Residues: 3-24, 'X', 26-27, 'X', 29-36; 48-74; 228-234; 235-248 <MAW>
A:Note: the sequence of peptide 1 from page 323 seems not to belong to this protein
C:Genetics: BVR
A:Gene: BVR
C:Keywords: oxidoreductase
F:3-296/Product: billeridin reductase IX-alpha #status experimental <MAT>

Query Match 92.7%; Score 38; DB 2; Length 296;
Best Local Similarity 85.7%; Pred. No. 2;
Matches 6; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
|||||||
Db 275 KKRILHC 281

RESULT 5
H86206
Hypothetical protein [imported] - Arabidopsis thaliana

C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C:Accession: H86206
R:Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alon
Chen, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar,
ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A:Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim,
C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marzia
Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A:Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallo
ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A:Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A:Reference number: A86141; MUID:21016719
A:Accession: H86206
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-512 <STO>
A:Cross-references: GB:AE005172; NID:g8954028; PIDN:AAF82202.1; GSPDB:GN00141
C:Genetics:
A:Map position: 1

Query Match 87.8%; Score 36; DB 2; Length 512;
Best Local Similarity 71.4%; Pred. No. 8.7;
Matches 5; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
|||||||
Db 236 KKRILHC 242

RESULT 6
F85015
probable phosphatidylinositol kinase [imported] - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 16-Feb-2001
C:Accession: F85015
R:anonymous, The European Union Arabidopsis Genome Sequencing Consortium, The Cold Sp
Nature 402, 769-777, 1999
A:Title: Sequence and analysis of chromosome 4 of the plant Arabidopsis thaliana.
A:Reference number: A85001; MUID:20083488
A:Accession: F85015
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-401 <STO>
A:Cross-references: GB:NC_001268; NID:g7267616; PIDN:CAB80928.1; GSPDB:GN00140
C:Genetics:
A:Gene: Atg01190
A:Map position: 4

Query Match 82.9%; Score 34; DB 2; Length 401;
Best Local Similarity 85.7%; Pred. No. 18;
Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 KKRIMHC 7
|||||||
Db 353 KKRILHC 359

RESULT 7
T01723
1-phosphatidylinositol-4-phosphate 5-kinase type II homolog - Arabidopsis thaliana
N:Alternate names: protein A.IG002N01.9
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 19-Feb-1999 #sequence_revision 19-Feb-1999 #text_change 24-Mar-1999
C:Accession: T01723
R:Scheet, P.; Maggi, L.
submitted to the EMBL Data Library, June 1997
A:Description: The sequence of A. thaliana IG002N01.
A:Reference number: Z14407
A:Accession: T01723
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA

A:Residues: 1-431 <SCH>
 A:Cross-references: EMBL:AF007269; NID:g2191126; PID:g2191143
 A:Experimental source: cultivar Columbia
 C:Genetics:
 A:Map position: 4
 A:Introns: 40/2; 94/3; 161/3; 224/2; 255/1; 271/1; 303/1; 339/2
 A:Note: A_IG002N01.9

Query Match 82.9%; Score 34; DB 2; Length 431;
 Best Local Similarity 85.7%; Pred. No. 19;
 Matches 6; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
 |||| ||
 Db 383 KKRIMHC 389

RESULT 8
 A38117
 hypothetical protein 1 - Anabaena sp. insertion sequence IS895
 C:Species: Anabaena sp.
 C:Date: 24-Jul-1992 #sequence_revision 24-Jul-1992 #text_change 15-Oct-1999
 C:Accession: A38117

R:Alam, J.; Vrba, J.M.; Cai, Y.; Martin, J.A.; Weislo, L.J.; Curtis, S.E.
 J. Bacteriol. 173, 5778-5783, 1991
 A:Title: Characterization of the IS895 family of insertion sequences from the cyanobacterium Anabaena sp.
 A:Reference number: A38117; MUID:91358370
 A:Accession: A38117
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-189 <ALA>
 A:Cross-references: GB:M67475; NID:g142026; PIDN:AAA98138.1; PID:g142027
 A:Experimental source: strain PCC 7120
 C:Genetics:
 A:Mobile element: insertion sequence IS895

Query Match 80.5%; Score 33; DB 2; Length 189;
 Best Local Similarity 71.4%; Pred. No. 15;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
 |||| ||
 Db 171 KKRIMHC 177

RESULT 9
 AD2414
 transposase all4868 [imported] - Anabaena sp. (strain PCC 7120)
 C:Species: Anabaena sp.
 A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
 C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
 C:Accession: AD2414

R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S.
 DNA Res. 8, 205-213, 2001
 A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena sp. strain PCC 7120
 A:Reference number: AB1807; MUID:21595285; PMID:11759840
 A:Accession: AD2414
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-189 <KUR>
 A:Cross-references: GB:BA000019; PIDN:BA000019; PID:g17134005; GSPDB:GN00179
 A:Experimental source: strain PCC 7120
 C:Genetics:
 A:Gene: all4868

Query Match 80.5%; Score 33; DB 2; Length 189;
 Best Local Similarity 71.4%; Pred. No. 15;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
 |||| ||
 Db 171 KKRIMHC 177

RESULT 10
 AE2064

transposase all2067 [imported] - Anabaena sp. (strain PCC 7120)
 C:Species: Anabaena sp.
 A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
 C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
 C:Accession: AE2064

R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S.
 DNA Res. 8, 205-213, 2001
 A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena sp. strain PCC 7120
 A:Reference number: AB1807; MUID:21595285; PMID:11759840
 A:Accession: AE2064
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-189 <KUR>
 A:Cross-references: GB:BA000019; PIDN:BA000019; PID:g17131158; GSPDB:GN00179
 A:Experimental source: strain PCC 7120
 C:Genetics:
 A:Gene: all2067

Query Match 80.5%; Score 33; DB 2; Length 189;
 Best Local Similarity 71.4%; Pred. No. 15;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
 |||| ||
 Db 171 KKRIMHC 177

RESULT 11
 AF2052

transposase all1972 [imported] - Anabaena sp. (strain PCC 7120)
 C:Species: Anabaena sp.
 A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
 C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
 C:Accession: AF2052

R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S.
 DNA Res. 8, 205-213, 2001
 A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena sp. strain PCC 7120
 A:Reference number: AB1807; MUID:21595285; PMID:11759840
 A:Accession: AF2052
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-189 <KUR>
 A:Cross-references: GB:BA000019; PIDN:BA000019; PID:g17131062; GSPDB:GN00179
 A:Experimental source: strain PCC 7120
 C:Genetics:
 A:Gene: all1972

Query Match 80.5%; Score 33; DB 2; Length 189;
 Best Local Similarity 71.4%; Pred. No. 15;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
 |||| ||
 Db 171 KKRIMHC 177

RESULT 12
 AF2152

transposase all2773 [imported] - Anabaena sp. (strain PCC 7120)
 C:Species: Anabaena sp.
 A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
 C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
 C:Accession: AF2152

R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S.
 DNA Res. 8, 205-213, 2001
 A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena sp. strain PCC 7120
 A:Reference number: AB1807; MUID:21595285; PMID:11759840
 A:Accession: AF2152
 A:Status: preliminary
 A:Molecule type: DNA
 A:Residues: 1-189 <KUR>
 A:Cross-references: GB:BA000019; PIDN:BA000019; PID:g17134005; GSPDB:GN00179
 A:Experimental source: strain PCC 7120
 C:Genetics:
 A:Gene: all4868

Query Match 80.5%; Score 33; DB 2; Length 189;
 Best Local Similarity 71.4%; Pred. No. 15;
 Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Oy 1 KKRIMHC 7
 |||| ||
 Db 171 KKRIMHC 177

A:Reference number: AB1807; MUID:21595285; PMID:11759840
A:Accession: AF2152
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-189 <KUR>
A:Cross-references: GB:BA000019; PIDN:BAB74472.1; PID:gl7131866; GSPDB:GN00179
A:Experimental source: strain PCC 7120
C:Genetics:
A:Gene: alr2773

Query Match 80.5%; Score 33; DB 2; Length 189;
Best Local Similarity 71.4%; Pred. No. 15;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|||: ||
Db 171 KKRLLKHC 177

RESULT 13

AG1875
transposase alr0552 [imported] - Anabaena sp. (strain PCC 7120)
C:Species: Anabaena sp.
A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
C:Accession: AG1875
R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S.
DNA Res. 8, 205-213, 2001
A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena
A:Reference number: AB1807; MUID:21595285; PMID:11759840
A:Accession: AG1875
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-189 <KUR>
A:Cross-references: GB:BA000019; PIDN:BAB72510.1; PID:gl7129897; GSPDB:GN00179
A:Experimental source: strain PCC 7120
C:Genetics:
A:Gene: alr0552

Query Match 80.5%; Score 33; DB 2; Length 189;
Best Local Similarity 71.4%; Pred. No. 15;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|||: ||
Db 171 KKRLLKHC 177

RESULT 14

AG2037
transposase alr1853 [imported] - Anabaena sp. (strain PCC 7120)
C:Species: Anabaena sp.
A:Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC 7120
C:Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 11-Jan-2002
C:Accession: AG2037
R:Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S.
DNA Res. 8, 205-213, 2001
A:Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anabaena
A:Reference number: AB1807; MUID:21595285; PMID:11759840
A:Accession: AG2037
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-189 <KUR>
A:Cross-references: GB:BA000019; PIDN:BAB73552.1; PID:gl7130943; GSPDB:GN00179
A:Experimental source: strain PCC 7120
C:Genetics:
A:Gene: alr1853

Query Match 80.5%; Score 33; DB 2; Length 189;
Best Local Similarity 71.4%; Pred. No. 15;
Matches 5; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|||: ||
Db 171 KKRLLKHC 177

RESULT 15

T02486
hypothetical protein At2g29990 [imported] - Arabidopsis thaliana
N:Alternate names: hypothetical protein F23F1.9
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 05-Mar-1999 #sequence_revision 05-Mar-1999 #text_change 16-Feb-2001
C:Accession: T02486; B84703
R:Rounsley, S.D.; Lin, X.; Ketchum, K.A.; Crosby, M.L.; Brandon, R.C.; Sykes, S.M.; K submitted to the EMBL Data Library, August 1998
A:Description: Arabidopsis thaliana chromosome II BAC F23F1 genomic sequence.
A:Reference number: 214675
A:Accession: T02486
A:Status: translated from GB/EMBL/DDBJ
A:Molecule type: DNA
A:Residues: 1-508 <ROU>
A:Cross-references: EMBL:AC004680; NID:g3420043; PID:g3420052
A:Experimental source: cultivar Columbia
R:Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y. M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter Nature 402, 761-768, 1999
A:Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A:Reference number: A84420; MUID:20083487
A:Accession: B84703
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-508 <STO>
A:Cross-references: GB:AE002093; NID:g3420052; PIDN:AAC31853.1; GSPDB:GN00139
C:Genetics:
A:Gene: At2g29990; F23F1.9
A:Map position: 2
A:Introns: 158/3; 230/1; 283/3; 305/3; 360/2; 398/3; 458/3
C:Superfamily: NADH dehydrogenase

Query Match 80.5%; Score 33; DB 2; Length 508;
Best Local Similarity 57.1%; Pred. No. 36;
Matches 4; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 KKRIMHC 7
|||: ||
Db 236 KKRLLKHC 242

Search completed: November 1, 2002, 14:50:57
Job time : 2.90943 secs